BUKU PANDUAN
DINAMIKA EKONOMI KESEHATAN
DI RUMAH SAKIT

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PENERBIT CV. PENA PERSADA

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KATA PENGANTAR

Segala puji senantiasa kita panjatkan kehadirat

Allah Swt, atas segala rahmat dan karunianya, akhirnya penulis dapat menyelesaikan penyusunan buku yang berjudul **“BUKU PANDUAN DINAMIKA EKONOMI KESEHATAN DI RUMAH SAKIT**”. Saya menyadari bahwa tanpa bantuan dan bimbingan dari berbagai pihak sangatlah sulit bagi saya untuk menyelesaikan karya ini. Oleh karena itu, saya mengucapkan banyak terima kasih pada semua pihak yang telah membantu penyusunan buku ini. Sehingga buku ini bisa hadir di hadapan pembaca.

Instalasi Gawat Darurat sebagai gerbang utama penanganan kasus gawat darurat di rumah sakit memegang peranan penting dalam upaya penyelamatan hidup pasien. Dalam melakukan pelayanan kesehatan di IGD, kecepatan merespon panggilan pasien merupakan hal yang penting karena berpengaruh terhadap keselamatan pasien. Dokter dan paramedis yang terlatih juga berperan dalam keselamatan penanganan pasien. Selain sumber daya manusia, pelayanan di IGD dipengaruhi oleh kelengkapan alat dan fasilitas di IGD. Kepuasan kerja merupakan hal yang bersifat individual.Setiap individu mempunyai tingkat kepuasan yang berbeda dan respon emosional beragam terhadap berbagai aspek pekerjaan seseorang. Dalam buku ini membahas mengenai Dinamika Lingkungan Rumah Sakit

Penulis menyadari bahwa buku ini masih jauh dari kesempurnaan. Oleh karena itu kritik dan saran yang membangun sangat dibutuhkan guna penyempurnaan buku ini. Akhir kata saya berharap Allah Swt berkenan membalas segala kebaikan semua pihak yang telah membantu.

Penulis

DAFTAR ISI

BUKU PANDUAN
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BAB I
PENDAHULUAN

A. Infrastruktur Kesehatan

Semua negara ingin memenuhi kesehatan dan kebutuhan medis penduduknya, dengan mempertimbangkan kemampuan diri sendiri atau tanpa menguras sumber daya yang melayani kebutuhan manusia yang penting lainnya.Dalam menghadapi permasalahan di bidang ekonomi, politik, budaya, lingkungan, epidemiologi dan kekuatan demografi, setiap negara ingin memiliki sistem pelayanan kesehatan yang baik dengan karakteristik dan kebutuhan penduduknya yang spesifik.Setiap negara membutuhkan infrastruktur kesehatan dasar masyarakat, yang di negara-negara berkembang dapat bergantung pada petugas kesehatan masyarakat. Pada negara-negara maju lebih menekankan pada peran dokter, perawat, dan profesional kesehatan lainnya, rumah sakit dan klinik, dan beberapa cara untuk membayar baik untuk layanan klinis dan obat-obatan, peralatan medis, dan intervensi lainnya. Solusi yang berguna dan tepat untuk menghemat biaya mungkin kadang-kadang datang dari negara berpenghasilan rendah yang harus berinovasi dengan meningkatkan kualitas sumber daya manusia.Pembuat kebijakan kesehatan nasional harus melakukan pendekatan budaya dan politik untuk menghasilkan pelayanan kesehatan yang paripurna (Morrissey, et al, 2015).

Saat ini pelayanan kesehatan mengalami perubahan, yang meliputi perubahan dalam karakter pasien juga sistem pelayanan kesehatan, sehingga penyedia pelayanan kesehatan harus menyesuaikan diri dengan kondisi tersebut, terlebih saat ini adalah era Sistem Jaminan Kesehatan Nasional.Saat ini

penyedia layanan primer telah meningkat, sehingga frekuensi pelayanan kesehatan meningkat juga.Tentunya pelayanan yang diberikan harus tetap berkualitas, efisien dan bermutu.(Anell, 2015).

Pelayanan kesehatan adalah hal yang sangat diperhatikan oleh masyarakat Indonesia saat ini, terlebih saat ini adalah era Sistem Jaminan Kesehatan Nasional. Dengan adanya Sistem Jaminan Kesehatan Nasional sikap dari pemberi pelayanan kesehatan khususnya dokter perlu diteliti.Misalnya dari sisi kepuasan dan persepsinya.Sistem Jaminan Kesehatan Nasional dengan lembaganya Badan Penyelenggara Jaminan Sosial membawa dampak ke banyak hal. Perlu diperhatikan juga hal-hal yang berhubungan dengan kepuasan pasien, dokter atau penyedia layanan kesehatan harus mendengarkan dengan seksama, menjelaskan hal-hal dengan cara yang mudah dimengerti, menunjukkan rasa hormat terhadap apa yang mereka katakan dan menghabiskan cukup waktu dengan mereka, sehingga tercipta juga kepuasan dokter yang baik (Fenton, et al, 2012).

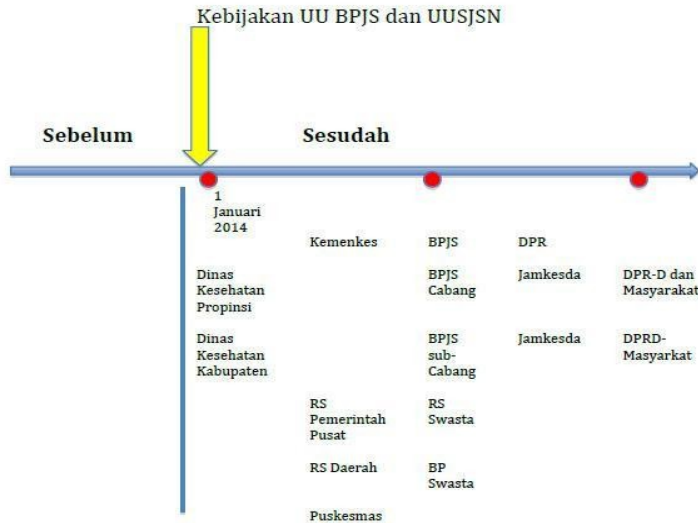
Dari segi perubahan struktur, BPJS Kesehatan merupakan transformasi dari program kesehatan sebelumnya, yaitu Asuransi Kesehatan atau Askes, Jaminan Kesehatan Masyarakat atau Jamkesmas, dan Jaminan Kesehatan Daerah atau Jamkesda. Ketiga program asuransi kesehatan ini sebelumnya dikelola oleh Badan Usaha Milik Negara atau BUMN (Idris, 2014).

Karena penulisan ini berfokus di instalasi gawat darurat, tentunya fokus pembahasannya meliputi kasus-kasus penyakit emergensi dan meneliti para dokter yang menangani kasus emergensi dalam pola pembayaran INA CBG'S.Pengaturan Sistem Jaminan Kesehatan Nasional hendaknya ditunjang juga dengan sistem informasi yang memadai.Misalnya

Pendaftaran, pembiayaan dan sosialisasi melalui online (Burwell, 2015).

Era BPJS ini adalah dari sisi masyarakatnya.Sejauh mana pengetahuan masyarakat tentang BPJS kesehatan, karena tidak semua masyarakat memahami dunia asuransi, khususnya jaminan sosial nasional.Adanya peran pemerintah sebagai penentu kebijakan sangat diperlukan, karena program Jaminan Kesehatan Nasional Ini pada dasarnya adalah program pemerintah (Ubel, et al, 2015).

B. Kebijakan Pelayanan

Sebagai perbandingan dalam pelaksanaan JKN, pemerintah perlu melihat sistem jaminan kesehatan di negara lain, misalnya di Inggris dengan National Health Service (NHS).Pelaksanaan JKN selain berfokus pada pengobatan juga harus berfokus pada pencegahan penyakit melalui penyuluhan kesehatan.Lalu perlu diperhatikan juga pengaturan yang jelas mengenai peran dokter umum sebagai layanan primer dan peran dokter spesialis sebagai layanan untuk rujukan (Martin, 2015).

Gambar 1.Kebijakan UU BPJS dan UU SJSN(Idris, 2014)

Misi pembangunan kesehatan Indonesia adalah memelihara dan meningkatkan pelayanan kesehatan yang bermutu, merata dan terjangkau. Dalam rangka meningkatkan mutu pelayanan kesehatan khususnya untuk masyarakat miskin, kementerian Kesehatan Republik Indonesia telah menetapkan kebijakan penerapan konsep INA-CBG *(Indonesia Case Base Groups)* sebagai sistem pembayaran pelayanan kesehatan. Hal ini sesuai dengan Keputusan Menteri Kesehatan RI Nomor 903/MENKES/PER/V/2011 tentang Pedoman Pelaksanaan Program Jaminan Kesehatan Masyarakat Tahun 2011 (Mukti, 2011).

Di negara maju, mekanisme *pay for performance* memberikan insentif finansial bila dokter menerapkan standar prosedur berbasis bukti untuk mencapai outcome klinis.Mekanisme *pay for performance* hanya dapat diterapkan dengan sistem mutu pelayanan kesehatan yang lebih mapan. Selain memerlukan pengukuran dan pelaporan mutu dari

fasilitas kesehatan yang terstandarisasi,ketersediaan data klinis mutlak diperlukan.Penerapan standar pedoman berbasis bukti serta ketersediaan informasi mutu pelayanan bagi pasien juga harusdikembangkan. Demikian pula data klinis yang tersedia di lembaga jaminan dan asuransi kesehatan dapat diumpan balikkan untuk meningkatkan mutu penyedia pelayanan yang dikontrak. Di Indonesia, belum tersedianya berbagai prasyarat tersebut merupakan realita yang tidak terbantahkan (Utarini, 2011).

Kepuasan dokter merupakan suatu hal yang penilaiannya dilihat dari persepsi dokter yang bersangkutan. Terdapat beberapa hal yang mempengaruhi kepuasan kerja seorang dokter, misalnya kehidupan sosial dan keluarga, kompetensi dokter dalam pekerjaannya, komunikasi dengan pimpinan rumah sakit, pendapatan yang diterima dan jenjang karir di rumah sakit. Di era BPJS ini tentunya perlu diteliti secara mendalam sejauh mana kepuasan dokter bekerja dalam era BPJS di Instalasi Gawat Darurat khususnya (Wong, et al, 2010).

NO	Keterangan	Jumlah Pasien										
		Sep 2013	Okt 2013	Nov 2013	Des 2013	Jan 2014	Feb 2014	Maret 2014	April 2014	Mei 2014	Juni 2014	Juli 2014
1	Total Kunjungan	1157	1205	1240	1256	1348	1288	1326	1312	1315	1201	1256
2	Meninggal di UGD	1	1	0	1	1	0	0	125	3		
3	Meninggal DOA	6	7	6	8	7	6	7	8	9	5	7
4	Rujuk	5	19	15	20	23	40	32	12	5	10	15
5	Rawat Inap	389	390	387	397	431	412	464	441	451	450	447
6	Angka Infeksi Post Tindakan	2	1	2	3	3	2	2	3	5	5	4
7	KLL	29	31	30	28	33	32	32	30	35	29	33
8	Observasi	14	13	14	15	25	15	21	20	25	17	19
Total Pasien		1603	1716	1694	1725	1871	1795	1855	1836	1867	1722	1784

ya penambahan jumlah

BAB II
JAMINAN KESEHATAN

A. Sistem Jaminan Kesehatan Nasional

Salah satu faktor kunci dalam pengembangan pelayanan rumah sakit adalah bagaimana meningkatkan mutu pelayanan klinik.Rumah sakit adalah lembaga yang memberikan pelayanan klinik sehingga mutu klinik merupakan indikator penting baik buruknya rumah sakit.Yang jadi menjadi permasalahan utama dalam pelayanan kesehatan adalah pada pembiayaan kesehatan, sehingga dengan adanya Sistem Jaminan Kesehatan Nasional, dapat menghasilkan perubahan yang lebih baik dalam pelayanan kesehatan di Indonesia.Pelayanan dokter di RS meliputi pelayanan oleh dokter spesialis dan dokter umum, pola jam kerjanya juga berbeda.Sehingga mempengaruhi karakter pelayanan pasien di rumah sakit (Trisnantoro, 2005).Hal-hal penting yang perlu diperhatikan dalam implementasi Sistem Jaminan Kesehatan Nasional adalah peningkatan kualitas pelayanan kesehatan, membangun sistem pelayanan kesehatan yang lebih aman dan mengaplikasikan *patient safety* (Kohn et al, 2000).

Sistem Jaminan Sosial Nasional adalah Jaminan kesehatan yang diselenggarakan secara nasional berdasarkan prinsip asuransi sosial dan prinsip ekuitas. Jaminan kesehatan ini diselenggarakan dengan tujuan menjamin agar peserta memperoleh manfaat pemeliharaan kesehatan dan perlindungan dalam memenuhi kebutuhan dasar kesehatan. Peserta jaminan kesehatan adalah setiap orang yang telah membayar iuran atau iurannya dibayar oleh pemerintah (Idris, 2014).

JKN lahir melalui paradigma bahwa kesehatan adalah hak asasi setiap manusia sementara biaya kesehatan dinilai mahal, terlebih bagi pasien tidak mampu. Di sisi lain pemberi pelayanan kesehatan perlu diberi kompensasi atau ada pembiayaan pelayanan kesehatan. Sehingga dengan adanya BPJS diharapkan dapat mengatasi masalah pembiayaan kesehatan. Istilah Paradigma juga meliputi pengembangan teknologi informasi yang memberikan arah dan panduan bagaimana seharusnya perusahaan menggunakan teknologi informasi dalam berhubungan dengan lingkungan bisnisnya. Paradigma yang berkembang meliputi : 1. Paradigma *customer value*, 2. Paradigma *continuous improvement*, 3. Paradigma *cross-functional*, 4. Paradigma pemberdayaan karyawan (*employee empowerment*), 5. Paradigma peluang (Mulyadi, 2007).

Badan Penyelenggara Jaminan Sosial(BPJS) adalah badan hukum publik yang dibentuk untuk menyelenggarakan program jaminan sosial. BPJS terdiri dari BPJS Kesehatan dan BPJS Ketenagakerjaan.BPJS Kesehatan adalah badan hukum yang dibentuk untuk menyelenggarakan program jaminan kesehatan (Idris, 2014).

Anggota keluarga peserta berhak menerima manfaat jaminan kesehatan. Selain itu, setiap peserta juga dapat mengikutsertakan anggota keluarga lain yang menjadi tanggungannya dengan penambahan iuran (Bastian,2008). Tujuan akhir dari jaminan kesehatan adalah menjamin pembiayaan kesehatan, memperbaiki pelayanan kesehatan dan mendapatkan outcome klinis yang baik (Sar Adhikari, 2013).

Berbagai masalah dan kecenderungan pelayanan kesehatan yang terjadi saat ini dipengaruhi berbagai faktor yang saling berkaitan.

Salah satu dari faktor tersebut adalah cara memberikan penghargaan kepada dokter. Beberapa masalah dan kecenderungan mendasar yang perlu ditinjau dan dicarikan jalan keluar karena berkaitan dengan kompensasi dokter, misalnya secara nasional pembayaran masih didominasi sekitar 71%oleh pembayaran *out of pocket* untuk setiap layanan yang diberikan kepada pasien, yang dikenal sebagai *fee for service*. Kondisi ini mendorong pemberian layanan yang sering tidak diperlukan, menyebabkan pemborosan sumber daya dan menimbulkan ketidakpastian biaya bagi pasien dan ketidakpastian pendapatan bagi dokter (Abidin, 2008).

Pada Bulan Maret 2012, Perhimpunan Dokter Umum di Amerika Serikat membentuk Komisi Nasional untuk reformasi pembiayaan dokter yang memaksimalkan hasil klinis yang baik, bertambahnya kepuasan dan otonomi pasien dan dokter, dan menyediakan pelayanan yang *cost effective*. Pembentukan komisi ini didasari atas perlunya perbaikan sistem pelayanan kesehatan di Amerika Serikat dimana investasi masyarakat untuk kesehatan rendah, sementara biaya pelayanan kesehatan tinggi. Komisi ini dimulai dengan mengamati faktor-faktor yang menyebabkan biaya pelayanan kesehatan di Amerika Serikat tinggi. Terdapat kepercayaan bahwa rumah sakit lebih mementingkan teknologi dan perawatan yang mahal dibandingkan kepentingan pasien(Schroeder First, 2013).

Kekurangan yang paling utama dari asuransi kesehatan di Amerika Serikat adalah pada sistemnya. Di luar kota Massachusetts, yang baru-baru ini mengadakan reformasi di bidang kesehatan, tidak satupun penduduk usia kurang dari 65 tahun mendapat jaminan kesehatan. Penyedia asuransi swasta berperan dalam pelayananan kesehatan

berkualitas tinggi yang diperlukan dan efisien. Massachusetts telah lama dikenal sebagai pusat akademis kedokteran, penelitian biomedis, perawatan kesehatan berkualitas tinggi, dan disamping itu juga biaya perawatan kesehatan yang tinggi (Weissman & Bigby, 2009).

Pelayanan kesehatan di Amerika Serikat mengalami 3 masalah utama : jutaan orang tidak memiliki asuransi, biaya pelayanan kesehatan yang tidak terjangkau dan kualitas pelayanan yang tidak seharusnya. Institusi Affordable Care Act (ACA) membuat solusi yaitu dengan membuat jaminan kesehatan nasional (Wilensky, 2012). Sejak tahun 2010 institusi perlindungan pasien dan Affordable Care Act (ACA) mengalami kendala. Institusi Affordable Care Act (ACA) didirikan oleh obama dan partainya demokrat. Tetapi ini melalui kongres tanpa voting partai republik sehingga mengkritik obamacare di legislatif serta berusaha untuk menarik dan meninjau kembali (Oberlander, 2012).

WHO membuat strategi global yang pertama tentang sistem dan kebijakan kesehatan pada simposium global kedua mengenai sistem kesehatan di Beijing. Strategi yang digunakan adalah mengadakan penelitian pada negara-negara yang sedang mengembangkan sistem kesehatannya dan mengembangkan jaminan kesehatan nasional (Groves, 2012).

Berkaitan dengan JKN, institusi pelayanan kesehatan hendaknya memperbaiki efisiensi dan keunggulan kompetitif institusinya masing-masing dalam hubungannya dengan keefektifan harga dan kualitas pelayanan kesehatan. Alasan di belakang kemajuan ini adalah peningkatan manajemen dari institusi pelayanan kesehatan dan sistemnya, intensitas kompetisi di penyedia pelayanan kesehatan (Utarini, 2011).

Di Amerika Serikat terdapat peristiwa penting berkenaan dengan reformasi pembiayaan kesehatan yaitu ketika pemerintah federal Washington DC giat mensosialisasikan Jaminan Kesehatan Nasional dibawah Affordable Care Act (ACA) pada tanggal 15

Januari. Affordable Care Act menyediakan subsidi yang besar kepada masyarakat. Tetapi politik dari reformasi pembiayaan kesehatan ini mengalami pro dan kontra, 34 negara bagian menyatakan tidak ikut turut serta dalam program jaminan kesehatan nasional (Abbe, Gluck, 2014). Affordable Care Act juga giat memberi penyuluhan kepada masyarakat tentang pentingnya asuransi kesehatan, memberi investasi pada pelayanan kesehatan primer serta memberi penyuluhan pencegahan penyakit (Rosenbaum, 2011).

Implementasi reformasi pelayanan kesehatan di Carolina Utara mengalami kendala dan tidak berhasil menjalankan program yang telah ditetapkan pemerintah. Kondisi ini disebabkan oleh kurangnya sumber daya manusia, sosialisasi dan kemampuan koordinasi. Para pendukung Obamacare harus berkompetisi dengan kelompok anti obamacare dari partai republik (Oberlander Pereira, 2013).

Bagi sebagian besar orang Amerika yang mendapatkan asuransi kesehatan melalui majikan mereka, hukum tidak akan mengubah itu, tapi itu akan membuat mereka dalam cakupan lebih aman dan terjangkau. Hari ini, 105 juta orang telah melihat topi seumur hidup pada cakupan mereka terangkat, sehingga pasien anda tidak lagi menghadapi tragedi mendekati batas seumur hidup di tengah-tengah putaran kemoterapi atau episode di ICU. Sebagian besar pasien Anda Sekarang bisa mendapatkan perawatan pencegahan tanpa membayar *deductible* dan *copays,* peduli bahwa anda tahu menyelamatkan nyawa, dari awal usus besar dan kanker payudara pemutaran tes kardiovaskular dan suntikan flu. Karena Batasan baru pada biaya *overhead* asuransi, 13 juta orang Amerika Punya lebih dari 1 miliar dolar dalam rabat dan pada 2019, ekonom percaya, premi

keluarga akan menjadi sekitar 2.000 dolar kurang (Obama, 2012).

Sebagai Pemimpin pemerintahan Obama memiliki lebih dari beberapa bulan terakhir pelaksanaan ditunda dari berbagai bagian dari undang-undang Perawatan Terjangkau(ACA), lawan politik Presiden ini telah menuduh bahwa keputusannya adalah "terang-terangan ilegal," bahwa pemerintahannya bertindak"seolah-olah tidak terikat oleh hukum, "dan bahwa keputusannya" meningkatkan kekhawatiran serius tentang memahami bahwa, tidak seperti raja Inggris Abad pertengahan, presiden Amerika harus di bawah konstitusi kita, bukan kekuasaan diskresi untuk berhati-hati bahwa hukum menjadi setia dieksekusi. Memang, DPR telah mengesahkan, pada suara partai untuk menegakkan hukum Undang-Undang, menciptakan yurisdiksi pengadilan federal untuk memungkinkan kongresuntuk menuntut dan memaksaPresidenuntuk menegakkan persyaratan hukum federal (Stoltzfus , Lazarus, 2014).

Tabel 2.Faktor Sukses Organisasi Dalam Manajemen

Faktor Sukses Organisasi Dalam Manajemen Tradisional	**Faktor Sukses Organisasi Dalam Manajemen Modern**
Ukuran (*Size*)	Kecepatan (*Speed*)
Kejelasan Peran (*Role Clarity*)	Fleksibilitas Permanen (*Permanent Flexibility*)
Spesialisasi (*Specialization*)	Keterpaduan (*Integration*)
Pengendali (*Control*)	Inovasi (*Innovation*)

1. National Health Service

National Health Service(NHS) adalah nama bersama tiga dari empat kesehatan yang didanai publik di Inggris. Sistem yang didanai melalui pajak umum berbeda dengan pembayaran asuransi, dan didirikan pada tahun 1948.Mereka menyediakan berbagai macam layanan kesehatan, sebagian besar diantaranya gratis.Reformasi pelayanan kesehatan pertama kali diperkenalkan oleh pemerintah Konservatif Margaret Thatcher pada tahun 1991 sebagai pusat kontrol dari NHS. Divisi ini dipisahkan pembayar monopoli yang bertanggung jawab untuk komisaris NHS, dari rumah sakit NHS yang sebelumnya telah didanai melalui block grant tahunan dan kini diperlukan untuk bersaing untuk bisnis (Roland, Rosen, 2011).

Beberapa bulan terakhir terdapat kritik yang paling intens dan berkepanjangan dalam sejarah National Health Service (NHS) di Inggris selama 65 tahun. Beberapa kritikus telah menyarankan bahwa NHS menghadapi krisis yang bisa diselesaikan hanya dengan mengubah prinsip dasar yang didirikan berkaitan dengan penyediaan dana dari pajak umum. Meskipun kritik itu dipicu oleh laporan yang disusun pada bulan Februari tentang kekurangan di salah satu rumah sakit.Pada tahun 2010 terdapat suatu masalah dalam dua kekuatan besar NHS yaitu sektor publik penghematan keuangan dan reorganisasi administrasi. Sehingga menciptakan gejolak saat ini (Black, 2013).

Dalam sejarahnya ketika hari-hari pertama implementasi NHS, dokter umum di Britania mengalami kesulitan. Tetapi dengan didirikannya Royal College of General Practitioners di Tahun 1952. Pendekatan yang menyeluruh dilakukan untuk meningkatkan disiplin, dimana dilakukan

edukasi dan pelatihan kepada para dokter. Para dokter muda ditekankan akan pentingnya hubungan dokter-pasien sebagai bagian dari terapi, manajemen penyakit kronis dan metode pengembangan komunikasi dengan pasien (Kerr , Scott, 2009). Ahli pembiayaan kesehatan WHO Joe Kutzin sepakat bahwa skema asuransi kesehatan dapat mempromosikan kemajuan dalam pencapaian cakupan universal, seperti subsidi pemerintah untuk memastikan bahwa masyarakat miskin termasuk di dalamnya (WHO, 2013).

Seperti pemerintah Inggris Baru-baru ini, pemerintah koalisi non konservatif Liberal Demokrat Baru Melakukan perubahan struktural untuk National Health Service(NHS) di Inggris. Perubahan tersebut sedang membuat janji-janji kampanye meskipun oleh Partai Konservatif Bahwa tidak akan mereorganisasi dan meskipun satu dekade mantap meningkatkan pelayanan: misalnya, menunggu untuk operasi elektif. Serta orang yang diduga kanker sekarang dilihat oleh khusus dalam waktu 2 minggu, dan tingkat kelangsungan hidup diantara pasien yang dirawat di unit perawatan kritis telah meningkat lebih dari 2% per tahun.(Black, 2010).

Pembayaran untuk kinerja program sedang diadopsi secara internasional meskipun sedikit bukti bahwa mereka meningkatkan hasil pasien.Pada tahun 2008, sebuah program yang disebut Memajukan Kualitas, berdasarkan Rumah Sakit Kualitas Insentif Demonstrasi di Amerika Serikat, diperkenalkan pada nama *National Health Service*(NHS) rumah sakit di wilayah utara-barat dari Inggris dengan penduduk sebanyak 6,8 juta (Sutton, et al, 2012).

Tabel 3.Indikator Kinerja Kepala Instalasi Gawat Darurat

INDIKATOR KINERJA KEPALA INSTALASI GAWAT DARURAT

No		INDIKATOR	STANDAR/TARGET
1	I	❑ SDM IGD bersertifikat ATLS,BTLS,PPGD ❑ kelengkapan jumlah dan jenis SDM ❑ memiliki izin praktek yang syah (Dokter) ❑ memiliki sertifikat manajemen UGD ❑ Mengikuti pelatihan minimal 20 jam pertahun	100%
2	P	❑ Ketepatan waktu pelayanan (OTD) ❑ Time reponse pelayanan ❑ Pelayanan sesuai protap dan standar ❑ pelayanan dokter IGD < 5 menit ❑ Lulus Akreditasi Nasional ❑ Penerapan program patient safety ❑ Tidak adanya Error	
3	OP	❑ Jumlah pasien yang dilayani ❑ jumlah tindakan di IGD	
4	OC	❑ Kepuasan Pasien terhadap IGD ❑ Kematian pasien < 24 jam	
5	B	❑ Besaran pendapatan yang dihasilkan IGD	
6	Imp	❑ Tidak adanya tuntutan terhadap IGD	

(www.kebijakan kesehatan indonesia.net)

B. Teori Tentang Kepuasan dan Persepsi

1. Definisi Kepuasan

Kepuasan adalah suatu keadaan kesenangan dan kesejahteraan, disebabkan karena orang telah mencapai suatu tujuan atau sasaran dan satu perasaan yang menyertai seseorang setelah ia memusatkan satu motif.Sementara persepsi adalah kesadaran intuitif mengenai kebenaran langsung atau keyakinan yang serta merta mengenai sesuatu.Kaitannya dengan profesi dokter, tentunya kepuasan kerja dapat terwujud dengan misalnya mengkomunikasikan transparansi keuangan dengan baik, adanya pemimpin rumah sakit sebagai komunikator yang baik dan dapat melakukan pendekatan yang baik dengan para pekerjanya (Reed, et al, 2015).

2. Konsep kepuasan

Kepuasan kerja adalah mediator untuk sumber stres dan kesejahteraan fisik. Stres mempengaruhi kesejahteraan fisik manajer melalui kepuasan.Kepuasan berhubungan dengan sumber stres yang meliputi beban kerja, penerimaan, serta keseimbangan antara hubungan relasi dengan pekerjaan rumah. Kepuasan dalam lingkungan kerja berhubungan dengan perasaan positif, perasaan negatif dan sikap tentang pekerjaan.Kepuasan kerja berhubungan dengan pemenuhan nilai kerja yang penting dan merupakan penghargaan dari pekerjaan. Kepuasan berhubungan dengan perasaan individu terhadap lingkungan kerjanya(Wong, et al, 2010).

3. Faktor Yang Berhubungan Dengan Kepuasan Dan Cara Mengukur Kepuasan

Faktor-faktor yang berhubungan dengan kepuasan kerja adalah adanya persepsi awal terhadap suatu pekerjaan dan apakah imbalan seseorang terhadap pekerjaan itu ternyata sesuai dengan persepsi awalnya tadi. Kecintaan seseorang terhadap pekerjaannya juga mempengaruhi kepuasan, lalu nanti mempengaruhi performa kerjanya. Kaitannya dengan kepuasan kerja dokter, sikap pasien terhadap dokter berhubungan dengan kepuasan kerja, juga perhatian manajer rumah sakit terhadap dokter (Muchlas, 2008).

4. Cara Mengukur Kepuasan

Dalam menginterpretasikan dan mempersepsikan apa yang dikerjakan orang lain, terkadang kita diharuskan menempuh cara-cara

singkat untuk menilai orang lain. cara-cara tersebut antara lain (Muchlas, 2008):

a. Persepsi Selektif. Merupakan persepsi di mana orang-orang menginterpretasikan secara selektif apa yang mereka lihat berdasarkan kepentingan, latar belakang, pengalaman dan sikap mereka.
b. Proyeksi. Kecenderungan untuk menghubungkan karakteristik-karakteristik diri sendiri dengan individu lain, dalam menilai orang lain kita beranggapan bahwa mereka menyerupai atau mirip dengan kita.
c. Stereotip. Ketika menilai seseorang berdasarkan persepsi tentang kelompok dimana dia tergabung.
d. Efek Halo. Membuat sebuah gambaran umum tentang seseorang individu berdasarkan sebuah karakteristik, seperti kepandaian, keramahan, dll.

5. Hubungan antara SJSN dan Kepuasan dokter

Persepsi merupakan suatu proses bagaimana seseorang menyeleksi, mengatur dan menginterpretasikan masukan-masukan informasi dan pengalaman-pengalaman yang ada dan kemudian menafsirkannya untuk menciptakan keseluruhan gambaran yang berarti. Kaitannya dengan Sistem Jaminan Sosial Nasional ada hal-hal yang mempengaruhi persepsi dokter terhadap JKN, misalnya tentang sosialisasi SJSN terhadap dokter, fasilitas rumah sakit, obat-obatan, dan pembiayaan dokter di era JKN (Muchlas, 2008).

Kepuasan kerja pada dasarnya mencerminkan sejauh mana seorang individu menyukai pekerjaannya.Didefinisikan Secara formal, kepuasan kerja merupakan respon afektif atau emosional terhadap berbagai aspek

pekerjaan seseorang. Definisi ini berarti kepuasan kerja bukanlah konsep kesatuan. Para peneliti di Cornell University mengembangkan Deskriptif Index Job (JDI) untuk menilai kepuasan seorang dengan dimensi kerja berikut: pekerjaan, membayar, promosi, rekan kerja, dan peneliti supervision.61 di University of Minnesota menyimpulkan ada 20 dimensi yang berbeda yang mendasari pekerjaan kepuasan. Meskipun peneliti tidak memiliki konsensus tentang jumlah yang tepat dari dimensi yang membentuk kepuasan kerja, mereka setuju bahwa ia memiliki lima penyebab dominan. Kami percaya bahwa pengetahuan tentang penyebab kepuasan kerja dapat membantu manajer dalam mencoba untuk meningkatkan sikap inikunci bekerja. Mari kita memeriksa penyebab kepuasan kerja. (Kreitner, Kinicki, 2008).

Tabel 4.Hal-Hal Yang Berhubungan Dengan Kepuasan Kerja

No	**Variabel Kepuasan**	**Arah Hubungan**	**Kekuatan Hubungan**
1.	Motivasi	Positif	Sedang
2.	Kesulitan dalam pekerjaan	Positif	Sedang
3.	Komitmen organisasi	Positif	Sedang
4.	Perilaku Karyawan	Postif	Sedang
5	ketidakhadiran	Negatif	Lemah
6.	Keterlambatan	Negatif	Lemah
7.	Pengetahuan	Negatif	Kuat

	karyawan		
8.	Penggantian karyawan	Negatif	Sedang
9.	Penyakit Jantung	Negatif	Sedang
10.	Stress yang dirasakan	Negatif	Kuat
11.	Voting Masyarakat	Negatif	Sedang
12.	Performa Pekerjaan	Positif	Sedang
13.	Kepuasan hidup	Positif	Sedang
14.	Kesehatan Mental	Positif	Sedang

(Sumber : Kreitner, Kinicki, 2008)

BAB III
SISTEM JAMINAN KESEHATAN NASIONAL

A. Sistem Asuransi

Karena merupakan program baru, sehingga ketika diterapkan di RS Bhineka Bakti Husada Para dokter mengalami tanggapan yang beragam terhadap BPJS. Sebelumnya penulis menanyakan terlebih dahulu kepada para dokter IGD, pengetahuan masing-masing dokter terhadap BPJS mendalam atau tidak. Karena idealnya, pengetahuan dokter terhadap BPJS haruslah mendalam.

Sistem Jaminan Sosial Nasional adalah Jaminan kesehatan yang diselenggarakan secara nasional berdasarkan prinsip asuransi sosial dan prinsip ekuitas. Jaminan kesehatan ini diselenggarakan dengan tujuan menjamin agar peserta memperoleh manfaat pemeliharaan kesehatan dan perlindungan dalam memenuhi kebutuhan dasar kesehatan. Peserta jaminan kesehatan adalah setiap orang yang telah membayar iuran atau iurannya dibayar oleh pemerintah (Idris, 2014).

Badan Penyelenggara Jaminan Sosial(BPJS) adalah badan hukum publik yang dibentuk untuk menyelenggarakan program jaminan sosial. BPJS terdiri dari BPJS Kesehatan dan BPJS Ketenagakerjaan. BPJS Kesehatan adalah badan hukum yang dibentuk untuk menyelenggarakan program jaminan kesehatan (Idris, 2014)

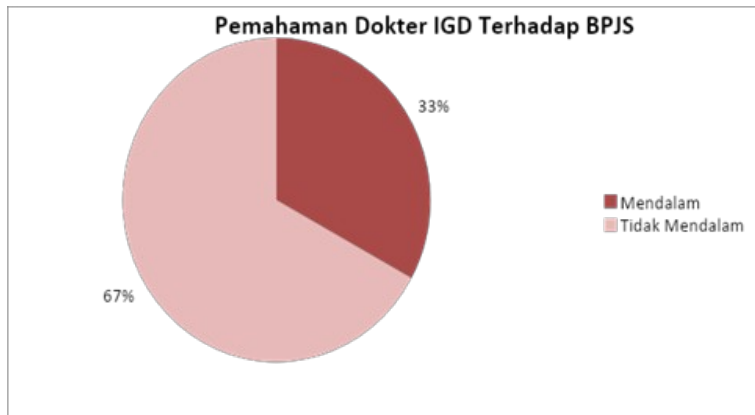
> “JKN adalah program pemerintah yang membantu masyarakatnya dalam bidang kesehatan khususnya melalui subsidi silang. Implementasinya sejauh ini baik hanya saja ada beberapa sistem yang harus diperbaiki dan prosedur diperjelas” (Responden A).

”JKN adalah Sistem Jaminan Kesehatan Nasional.Di RS Bhineka Bakti Husada ini sudah melayani peserta JKN” (Responden B).

”Saya tidak tahu banyak tentang implementasi JKN di RS Bhineka bakti Husada ...” (Responden C).

”Menurut saya Sistem Jaminan Kesehatan Nasional cukup baik”. (Responden D).

”BPJS dengan JKN-nya adalah berobat murah”.RS BBH sebagai ppk 2, poli spesialis melayani rujukan ppk 1, UGD dapat langsung melayani pasien gawat darurat tanpa rujukan. (Responden E).

”Saya tidak tahu banyak tentang Sistem Jaminan Kesehatan Nasional”. (Responden F).

B. Kepuasan Kerja

Pada dasarnya setiap dokter menginginkan agar bekerja sesuai passionnya. Definisi kepuasan disini diartikan oleh para dokter sebagai pendapatan. Penulis mengartikan disini secara umum dalam menanyakan ke para dokter.Untuk lebih tepatnya kepuasan dari segi apa, penulis menanyakan ke

faktor-faktor yang lebih detail yang terdapat di halaman tesis berikutnya.

Kepuasan adalah suatu keadaan kesenangan dan kesejahteraan, disebabkan karena orang telah mencapai suatu tujuan atau sasaran dan satu perasaan yang menyertai seseorang setelah ia memusatkan satu motif. Sementara persepsi adalah kesadaran intuitif mengenai kebenaran langsung atau keyakinan yang serta merta mengenai sesuatu.Kaitannya dengan profesi dokter, tentunya kepuasan kerja dapat terwujud dengan misalnya mengkomunikasikan transparansi keuangan dengan baik, adanya pemimpin rumah sakit sebagai komunikator yang baik dan dapat melakukan pendekatan yang baik dengan para pekerjanya (Reed, et al. 2015).

”Kepuasan kerja itu disaat kita dalam menyelesaikan tugas dengan baik. Cara menciptakan kepuasan kerja adalah membangun hubungan baik dengan sesama rekan kerja baik medis maupun non medis dan mempunyai komunikasi dokter-pasien yang baik” (Responden A).

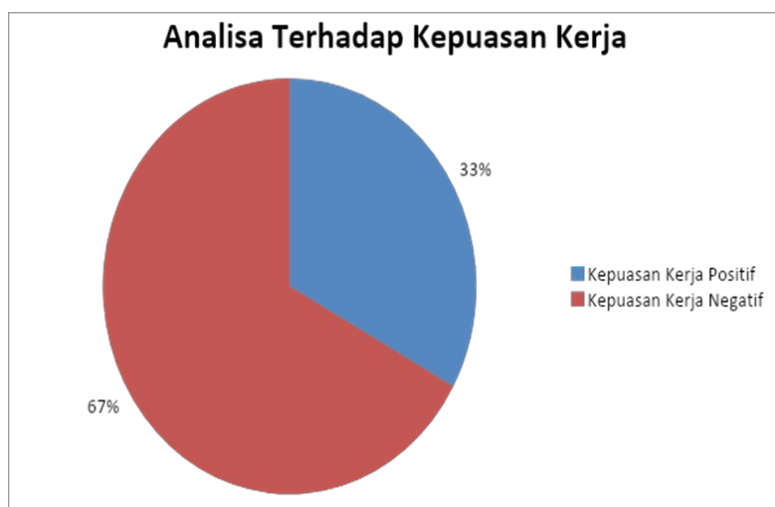
”Antara beban kerja dan pendapatan seimbang. Harus ada keseimbangan, antara beban kerja dan pendapatan” (Responden B).

“Kepuasan kerja adalah dimana jalinan kekeluargaan di sesama tim medis tercipta serta gaji masuk akal dimana manajemen harus transparan. Konsuler harus dapat mengontrol emosi karena saya disini bekerja, bukan sebagai mahasiswa. …” (Responden C).

”Kepuasan kerja adalah kondisi dimana pekerja merasakan keseimbangan antara hak dan kewajibannya. Diberikan gaji yang sesuai dengan

tuntutan ekonomi, rata-rata kebutuhan hidup, jangan di bawah itu. Dan ada penghargaan berupa bonus terhadap prestasi-prestasi yang sudah dicapai. ”. (Responden D).

”Kepuasan kerja adalah jika customer atau anak buah atau mitra kerja atau atasan puas dengan apa yang saya berikan dan harus dijalin terus komunikasi 2 arah terutama terkait Standar Operasi Prosedur (SOP).” (Responden E).

”Kepuasan kerja bila hasil kerja kita dihargai secara maksimal baik oleh pasien maupun instansi yang mempekerjakan kita, caranya bisa dengan penghargaan ataupun berupa bonus insentif menarik”. (Responden F).

C. Harapan Tentang Pekerjaan

Setiap dokter pada dasarnya sudah mengetahui bahwa pekerjaannya adalah pekerjaan sosial. *Financial s*ebetulnya bukan hal utama tujuan dokter bekerja. Karena penelitian ini berfokus pada dokter umum, tetapi sebagai *filosofi* bahwa kepuasan dokter

spesialis digambarkan dari kepuasan dokter umum terlebih dahulu. Apabila dokter umum puas di*analogikan* dokter spesialis akan puas, tetapi apabila dokter umum di RS Bhineka Bakti Husada tidak puas, dokter spesialis akan tidak puas.

Harapan tentang pekerjaan dipengaruhi oleh kepuasan kerja, stress dan pemenuhan hasil kerja. Kepuasan kerja adalah mediator untuk sumber stres dan kesejahteraan fisik. Stres mempengaruhi kesejahteraan fisik manajer melalui kepuasan.Kepuasan berhubungan dengan sumber stres yang meliputi beban kerja, penerimaan, serta keseimbangan antara hubungan relasi dengan pekerjaan rumah.(Wong, et al. 2010).Kepuasan dalam lingkungan kerja berhubungan dengan perasaan positif, perasaan negatif dan sikap tentang pekerjaan. Kepuasan kerja berhubungan dengan pemenuhan nilai kerja yang penting dan merupakan penghargaan dari pekerjaan.Kepuasan berhubungan dengan perasaan individu terhadap lingkungan kerjanya (Wong, et al. 2010).

“ Saya harus menjalani pekerjaan yang sesuai dengan kemampuan dan bidang pendidikan saya. Saat ini saya merasakan pekerjaan saya belum nyaman secara keseluruhan “ (Responden A).

”Di RS Bhineka Bakti Husada ini sudah tercipta suasana kerja yang nyaman”. (Responden B).

”Saya menginginkan pekerjaan yang lebih manusiawi”.(Responden C).

”Pekerjaan yang gajinya tidak dibawah Upah Minimum Regional (UMR). Yang sesuai dengan tuntutan ekonomi “.(Responden D).

”Pekerjaan yang tidak membuat saya stress dan tertekan. Di RS Bhineka Bakti Husada saya belum merasa nyaman”.(Responden E).

”Kurang nyaman, karena tidak ada kejelasan dari pihak pemerintah terhadap profesi dokter, hanya tuntutan kerja lebih banyak tanpa diimbangi dengan fasilitas yang memadai. (Responden F).

D. Kepuasan terhadap pendapatan

Terdapat anggapan di masyarakat bahwa biaya berobat di rumah sakit itu mahal atau tarif dokter itu besar. Yang perlu diketahui adalah, memang ada beberapa tindakan dokter yang berbiaya mahal, tetapi tidak ada dokter yang berniat mencelakakan pasiennya. Untuk tatalaksana kasus di IGD, tentunya pembiayaan pelayanan kesehatannya akan berhadapan dengan kasus-kasus kritis, sehingga harus melaksanakan tindakan dahulu, baru memikirkan pembiayaan. Itupun dengan waktu yang cepat dan keakuratan yang tepat.

Faktor-faktor yang berhubungan dengan kepuasan kerja adalah adanya persepsi awal terhadap suatu pekerjaan dan apakah imbalan seseorang terhadap pekerjaan itu ternyata sesuai dengan persepsi awalnya tadi.Kecintaan seseorang terhadap pekerjaannya juga mempengaruhi kepuasan, lalu nanti mempengaruhi performa kerjanya. Kaitannya dengan kepuasan kerja dokter, sikap pasien terhadap dokter berhubungan dengan kepuasan kerja, juga perhatian manajer rumah sakit terhadap dokter (Muchlas, 2008).

”Pola pembayaran INA CBG'S belum sesuai dengan real di lapangan dan banyak hal yang tidak diperhitungkan “ (Responden A).

”Pendapatan di RS Bhineka Bakti Husada ini sudah sesuai. Tetapi paket pembayaran belum sesuai dengan cost RS Swasta” (Responden B).

”Saya tidak mengerti dengan sistem pembayaran di RS Bhineka Bakti Husada”. (Responden C).

“Pendapatan yang saya terima belum sesuai“. (Responden D).

”Pendapatan tidak sesuai dan tidak mengetahui tentang pola pembayaran INA CBG'S”. (Responden E).

“Pendapatan seharusnya disesuaikan dengan beban kerja yang bertambah”. (Responden F).

E. Kepuasan Dokter Umum IGD terhadap Fasilitas

Fasilitas di rumah sakit mempunyai peran penting dalam praktek medis. Meskipun sumber daya manusia adalah yang paling utama, dokter yang berpraktek di rumah sakit pasti sangat memerlukan fasilitas yang, terlebih lagi dokter yang bertugas di IGD. Fasilitas rumah sakit yang lengkap sangat diharapkan karena penatalaksanaan pasien kasus kritis, sesudah penanganan awal, untuk selanjutnya memerlukan peralatan dan fasilitas yang lengkap.

Saat ini pelayanan kesehatan mengalami perubahan, yang meliputi perubahan dalam karakter pasien juga sistem pelayanan kesehatan, sehingga penyedia pelayanan kesehatan harus menyesuaikan diri dengan kondisi tersebut, terlebih saat ini adalah era Sistem Jaminan Kesehatan Nasional.Saat ini penyedia layanan primer telah meningkat, sehingga frekuensi pelayanan kesehatan meningkat juga.Tentunya pelayanan yang diberikan harus tetap berkualitas, efisien dan bermutu.(Anell, 2015).

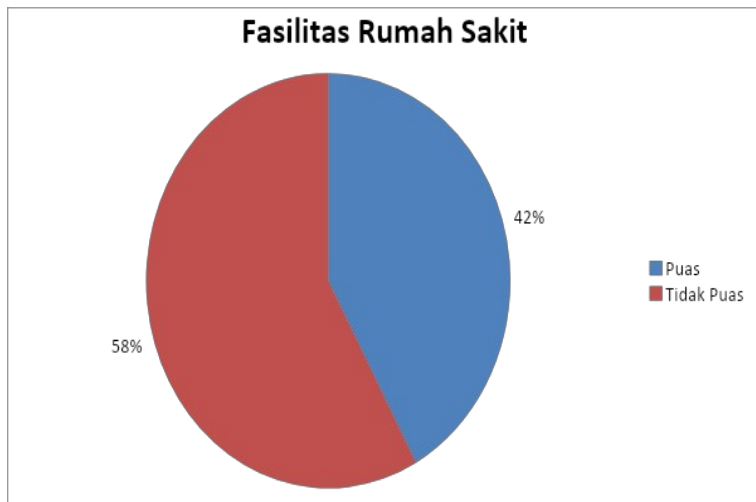
”Tipe RS ini sudah lengkap dan sesuai dengan tipe D, tetapi belum sepenuhnya memadai” (Responden A).

“Fasilitas di RS Bhineka Bakti Husada sudah memadai”.(Responden B).

“ Fasilitas di RS Bhineka Bakti Husada sudah cukup baik”(Responden C).

“Kelengkapan fasilitas di RS Bhineka Bakti Husada belum memadai“.(Responden D).

“Fasilitas di RS Bhineka Bakti Husada sudah cukup baik”.(Responden E).

“Fasilitas kurang nyaman, terutama untuk dokter jaga ruangan.Seharusnya punya ruangan sendiri tidak campur dengan ICU karena tidak ada privasi.” (Responden F).

BAB IV
MANAJEMEN RUMAH SAKIT

A. Lingkungan sekitar rumah sakit

Yang dimaksud dengan lingkungan rumah sakit dalam hal ini adalah lingkungan sosial, lingkungan fisik non medis dan juga lingkungan fisik medis, yang meliputi penatalaksanaan limbah rumah sakit. Lingkungan sosial adalah bagaimana pihak fungsional juga pihak manajemen rumah sakit membuka hubungan baik dengan warga sekitar. Untuk masalah lingkungan fisik, hendaknya dibicarakan dan dikoordinasikan dengan seluruh staf rumah sakit, apakah mempergunakan sistem *outsourcing* atau tidak.

Yang harus diperhatikan juga dalam era BPJS ini adalah dari sisi masyarakatnya.Sejauh mana pengetahuan masyarakat tentang BPJS kesehatan, karena tidak semua masyarakat memahami dunia asuransi, khususnya jaminan sosial nasional.Adanya peran pemerintah sebagai penentu kebijakan sangat diperlukan, karena program Jaminan Kesehatan Nasional Ini pada dasarnya adalah program pemerintah (Ubel, et al. 2015).

“Kurang tau, untuk hubungan dengan warga sekitar selama ini, sarana transportasi baik, dan kondisi alam juga mendukung.Sering sharing dan saling kerjasama (ada sekolahan dan kampus), tidak ada salahnya menjalin kerjasama supaya siswa atau mahasiswanya berobat ke RS.”(Responden A).

“Rumah Sakit Bhineka Bakti Husada harus sering mengadakan seminar untuk awam”. (Responden B).

”Lokasi RS Bhineka Bakti Husada strategis. RS harus sering memberi penyuluhan “ . (Responden C).

”Memberikan pelayanan yang baik, cepat, bertanggung jawab kepada warga sekitar.Menjaga lingkungan hidup tidak membuang limbah rumah sakit ke sungai atau lingkungan sekitar.” (Responden D).

”Lingkungan sekitar rumah sakit sudah baik”. (Responden E).

”Dengan lingkungan sekitar harusnya lebih baik lagi, jangan pihak RS saja yang terjun ke lapangan. Seharusnya pihak BPJS memberikan penjelasan kepada pesertanya apa saja yang bisa diperiksa secara gratis mana yang tidak. Jangan tutup mata saja diserahkan pada pihak RS atau dokternya yang menerangkan seakan-akan dokter enggan menolong peserta BPJS, padahal itu komitmen yang BPJS berikan ke pihak RS. (Responden F).

B. Pendapat Tentang Manajemen

Manajemen rumah sakit harus memposisikan diri tidak hanya sebagai pemimpin tapi juga

komunikator yang baik. Jangan sampai para dokter merasa diperlakukan tidak adil oleh para staf pemimpin. Yang menjadi dilema adalah ketika di RS Bhineka Bakti Husada terdapat dokter konsultan yang lebih senior dibanding pihak manajemen rumah sakitnya, sehingga dokter yang senior merasa tidak mau diperintah. Untuk mengatasi persoalan ini pemimpin rumah sakit harus melakukan pendekatan yang *komprehensif* terhadap para klinisi.

Manajemen Rumah Sakit memegang penting dalam karir dokter di rumah sakit.Kaitannya dengan profesi dokter, tentunya kepuasan kerja dapat terwujud dengan misalnya mengkomunikasikan transparansi keuangan dengan baik, adanya pemimpin rumah sakit sebagai komunikator yang baik dan dapat melakukan pendekatan yang baik dengan para pekerjanya (Mukhlas, 2008).

”Kerja manajemen belum optimal, butuh banyak perbaikan dan belum bagus”. (Responden A).

”Kinerja manajemen di RS Bhineka Bakti Husada ini masih kurang” (Responden B).

”Manajemen masih kurang dan harus banyak belajar”.(Responden C).

”Kinerja Manajemen RS Bhineka Bakti Husada cukup baik. “.(Responden D).

”Manajemen RS Bhineka Bakti Husada masih plin plan, sosialisasi belum baik”. (Responden E).

“ Manajemen seharusnya berperan aktif kepada peserta BPJS maupun para dokter sehingga tidak merugikan salah satu pihak. (Responden F).

C. Pendapat tentang perlindungan hukum

Pada dasarnya tidak ada profesi yang kebal hukum. Perlindungan hukum disini maksudnya, dalam menjalankan profesinya yaitu melakukan *anamnesa*, melakukan tindakan dan memberi obat ke pasien tidak diartikan negatif. Karena niat seorang dokter untuk memeriksa pasien adalah dengan niat baik. Apabila seorang pasien tidak berhasil diselamatkan nyawa-nya, bukanlah kesalahan dokter. Dokter bukanlah Tuhan yang dapat memastikan sembuh, tetapi hanya perantara yang melakukan penyembuhan. Perkembangan dalam bidang hukum kesehatan hendaknya diimbangi juga dengan pengetahuan dokter-dokter terhadap aspek hukum kesehatan.

Perlindungan hukum adalah aspek yang selalu diperhatikan oleh para dokter.Semua negara ingin memenuhi kesehatan dan kebutuhan medis penduduknya, dengan mempertimbangkan kemampuan diri sendiri atau tanpa menguras sumber daya yang melayani kebutuhan manusia yang penting lainnya.Dalam menghadapi

permasalahan di bidang ekonomi, politik, budaya, lingkungan, epidemiologi dan kekuatan demografi, setiap negara ingin memiliki sistem pelayanan kesehatan yang baik dengan karakteristik dan kebutuhan penduduknya yang spesifik (Morrissey, et al. 2015).

”Belum merasa aman, selama ini belum ada kejelasan bagaimana posisi kita tentang perlindungan hukum di RS BBH”. (Responden A).

”Saya belum merasa aman dalam bekerja” (Responden B).

”Saya tidak mengetahui tentang perlindungan hukum dokter”.(Responden C).

”Saya merasa aman secara hukum bekerja di RS Bhineka Bakti Husada”. (Responden D).

”Perlindungan hukum tidak ada, ketar-ketir”. (Responden E).

”Perlindungan hukum seharusnya lebih jelas, misalkan peraturan yang dokter terapkan adalah peraturan BPJS, bukan peraturan dokter sendiri. Jadi tidak ada lagi pasien komplain karena dokter dianggap tidak manusiawi. Tidak mungkin seorang dokter mau mencelakakan pasiennya. Oleh karena itu pihak RS juga harus memberikan penjelasan kepada pihak BPJS ataupun pesertanya. (Responden F).

D. Rekan kerja medis dan non medis

Manusia adalah makhluk sosial. Begitu pula dengan dokter. Performa dokter dokter di rumah sakit pasti membutuhkan orang lain, baik internal maupun eksternal. Koordinasi dokter di rumah sakit mempunyai peran penting. Seringkali koordinasi dokter dipengaruhi oleh permasalahan pribadi. Hal ini yang harus dihindari. Dokter di IGD karena selalu berkutat dengan kasus-kasus kritis, harus dapat menjalin koordinasi yang baik dengan para stafnya. Harus dapat tegas, tangkas dan tepat dalam memberi instruksi, tanpa menyinggung perasaan rekan kerja yang diberi instruksi.

Kepuasan dalam lingkungan kerja berhubungan dengan perasaan positif, perasaan negatif dan sikap tentang pekerjaan.Kepuasan kerja berhubungan dengan pemenuhan nilai kerja yang penting dan merupakan penghargaan dari pekerjaan. Kepuasan berhubungan dengan perasaan individu terhadap lingkungan kerjanya (Wong, et al. 2010).

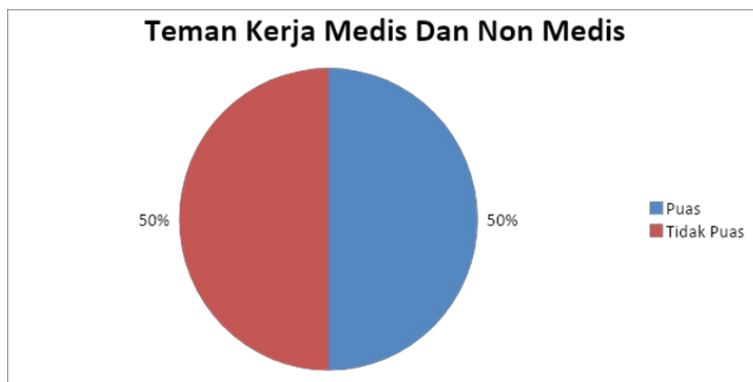
”Sangat penting, harus lebih ditingkatkan karena saat ini banyak tidak satu kata antara medis dan non medis tentang pelayanan pasien JKN. (Responden A).

”Hubungan dengan rekan sekerja disini baik”. (Responden B).

”Sangat perlu terciptanya hubungan kerja yang baik dengan rekan medis maupun non medis”. (Responden C).

”Penting sekali tercipta hubungan yang baik dengan rekan sekerja. (Responden D).

”Rekan kerja disini komunikatif, tetapi ditambah dengan adanya JKN kadang-kadang ada kendala”. (Responden E).

”Hubungan dengan rekan kerja harus lebih baik lagi, terutama dokter spesialis terhadap dokter umum.Harus lebih manusiawi, tidak menginjak-injak profesi dokter umum. Harus ada rasa saling menghargai (Responden F).

E. Yang diharapkan tentang pengembangan karir

Permasalahan pengembangan karir sebenarnya tidak berhubungan langsung dengan Sistem Jaminan Kesehatan Nasional (SJKN). Sebelum adanya implementasi JKN, karir tidaklah menjadi hal yang banyak dibicarakan di rumah sakit. Tetapi beberapa dokter memikirkannya.Sehingga penulis membuat hal ini berhubungan. Pada dasarnya terlepas dari adanya BPJS, masalah pengembangan karir tidak banyak dibicarakan,tetapi menjadi bagian yang tidak bisa dipisahkan dalam pembicaraan mengenai karir dokter.

Pengembangan karir termasuk aspek yang penting dalam profesi dokter.Pada negara-negara maju lebih menekankan pada peran dokter, perawat, dan profesional kesehatan lainnya, rumah sakit dan klinik, dan beberapa cara untuk membayar baik untuk layanan klinis dan obat-obatan, peralatan medis, dan intervensi lainnya. Solusi yang berguna dan tepat untuk menghemat biaya mungkin kadang-kadang datang dari negara berpenghasilan rendah yang harus berinovasi dengan meningkatkan kualitas sumber daya manusia.Pembuat kebijakan kesehatan nasional harus melakukan pendekatan budaya dan politik untuk menghasilkan pelayanan kesehatan yang paripurna (Morrissey, et al. 2015).

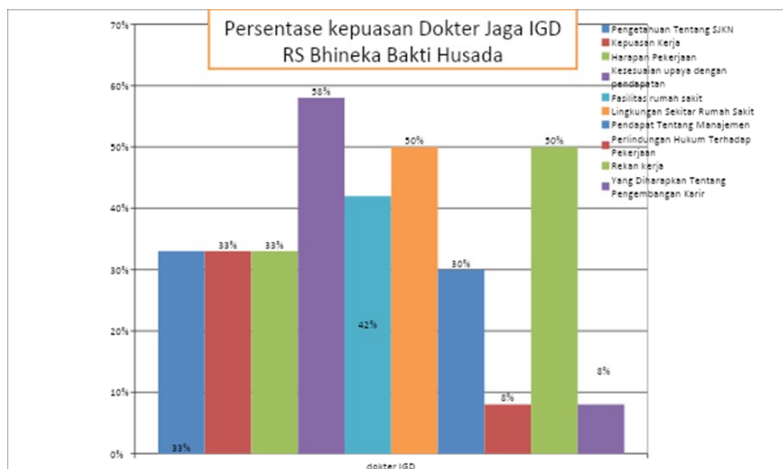
“Harapannya bisa diberikan kemudahan bila mengikuti seminar atau sejenisnya dan ada beasiswa ppds. Selama ini tidak ada pengembangan karir di rumah sakit Bhineka Bakti Husada, berhenti di tempat”.(Responden A).

”Harapan saya tentang pekerjaan ada jenjang karir, naik jabatan, naik gaji. Di RS Bhineka Bakti Husada ini belum ada jenjang karir” (Responden B).

”Agar ada penanjakan karir, gaji tidak naik, banyak dipotong” (Responden C).

”Diberikan kesempatan dokter part timer untuk menjadi dokter tetap dengan gaji yang sesuai standar dan pekerjaannya.Pengembangan karir di RS Bhineka Bakti Husada kurang”(Responden D).

”Di RS Bhineka bakti Husada tidak ada pengembangan karir”. (Responden E).

“Karir di RS Bhineka bakti Husada harus jelas, terutama untuk kontrak sebagai dokter jaga.Seharusnya lebih transparan terhadap pendapatan dokter-dokter, dan harus lebih cermat apabila dokter bersangkutan tidak dapat hadir, harus segera mencari pengganti dokter.Kelebihan Beban kerja harus dihitung.(Responden F).

BAB V
MANAJEMEN PELAYANAN RUMAH SAKIT

A. Performa Profesi

Ditinjau dari teori tentang perilaku organisasi terdapat hal-hal yang berhubungan dengan kepuasan kerja yaitu motivasi, kesulitan dalam pekerjaan, komitmen organisasi, perilaku karyawan, ketidakhadiran, keterlambatan, pengetahuan karyawan, penggantian karyawan, penyakit jantung, stres yang dirasakan, voting masyarakat, performa pekerjaan, kepuasan hidup dan kesehatan mental. Kaitannya dengan profesi dokter, tentunya stress yang dirasakan dapat diakibatkan adanya rasa tidak aman terhadap profesi medis dari segi perlindungan dari resiko medis dan salah satu solusinya adalah memperkuat prasarana hukum di rumah sakit.Solusi lainnya adalah mensosialisasikan asuransi profesi kepada para dokter jaga IGD. Untuk persoalan jenjang karir, tentunya perlu dilakukan komunikasi yang intensif dan efektif kepada para dokter IGD,

karena sesuai dengan teori perilaku organisasi komitmen dalam organisasi dan pengetahuan para dokter terhadap konsep kerja mempengaruhi kepuasan dokter terhadap pengembangan karir di rumah sakit (Kreitner, Kinicki,2008).

Hal lain yang perlu dilakukan oleh pihak manajemen rumah sakit adalah melakukan sosialisasi terkait Sistem Jaminan Sosial Nasional khususnya dalam aspek perlindungan hukum dan jenjang karir dokter. Berdasarkan teori tentang perilaku organisasi bahwa pengetahuan dokter, dalam hal ini tingkat pemahaman dokter terhadap BPJS, sangat mempengaruhi persepsi dokter terhadap JKN sehingga mempengaruhi kepuasan kerja (Kreitner, Kinicki,2008).

Ditinjau dari teori tentang kepuasan kerja, terdapat beberapa cara mengukur kepuasan. Hal-hal yang mempengaruhi adalah persepsi selektif, proyeksi,stereotip dan efek halo. Kaitannya dengan JKN, maka untuk mengatasi persoalan dalam bidang perlindungan hukum dan ketidakpuasan jenjang karir maka perlu dikaji dari aspek kepribadian dokter yang bersangkutan.Pihak manajemen rumah sakit harus melakukan pendekatan kepada para dokter, sesuai dengan karakteristik dan kepribadian masing-masing (Muchlas, 2008).

B. Pelayanan Kesehatan

Anatomi pelayanan klinis Rumah Sakit Bhineka Bakti Husada terdiri dari ruang IGD, poli umum, poli spesialis, ruang rawat inap, ruang bersalin (VK), ruang high care dan ICU. Permasalahan yang terjadi di setiap ruangan meliputi kasus medis darurat dan tidak darurat, biaya pelayanan kesehatan, sejauh mana komunikasi efektif pihak rumah sakit dengan pasien dan keluarganya dan sejauh mana kepuasan pasien terhadap hasil pengobatan. Hal-hal penting

yang mempengaruhi pelayanan medis adalah proses tata laksana kasus kritis di suatu RS, kompetensi petugas medis, cara pembayaran pasien dari sisi kemampuan. Hal-hal penting yang mempengaruhi proses bisnis di rumah sakit adalah Visi dan Misi RS, sebaliknya pandangan positif pasien terhadap pelayanan kesehatan dapat juga berpengaruh dan sejauh mana pengetahuan pasien terhadap pembiayaan pelayanan kesehatan. Kaitannya dengan JKN, pelayanan di RS tentunya harus memperhatikan tujuh standar untuk 16 jenis pelayanan RS yang di akreditasi KARS yaitu : aspek falsafah dan tujuan, administrasi dan manajemen, staf dan kepemimpinan, fasilitas dan peralatan, kebijakan dan prosedur, pengembangan staf dan program pendidikan, evaluasi dan pengendalian mutu (Koentjoro T, 2011).

Dalam menganalisa kepuasan kerja dokter di era JKN, tidak lepas dari sejarah pelayanan kesehatan di Indonesia.Misalnya terdapat pemahaman bahwa bekerja di RS pemerintah adalah pengabdian, sementara bekerja di RS Swasta adalah bisnis untuk mencari profit .Sementara BPJS di implementasikan di RS Swasta maupun di RS pemerintah.Hal yang penting disini adalah pengetahuan dokter terhadap BPJS mendalam atau tidak. Idealnya apabila pengetahuan dokter terhadap dokter BPJS mendalam, dokter akan berpikir positif terhadap BPJS. Karena BPJS diadakan,seharusnya membawa manfaat yang lebih dalam pelayanan kesehatan di Indonesia dibanding sebelumnya. Selain bermanfaat untuk masalah kesehatan masyarakat, adanya BPJS justru didesain agar lebih meningkatkan kesejahteraan dokter (Trisnantoro, 2005).

Terdapat beberapa hal yang mempengaruhi kepuasan kerja dalam suatu organisasi yang dalam

hal ini adalah instansi rumah sakit yaitu melalui penghargaan. Terdapat jenis-jenis Penghargaan. Yaitu penghargaan positif dan penghargaan negatif. Yang termasuk penghargaan positif : otonomi, kekuasaan, kesempatan untuk berpartisipasi dalam proses pengambilan keputusan, kenaikan gaji/upah, bonus, opsi saham, sanjungan, pengakuan, kenaikan pangkat, gelar/sebutan, pemberian tugas penting, pemberian ruang kantor, tempat parkir khusus, keanggotaan di klub eksekutif, jaminan pekerjaan, penghargaan berupa barang, perjalanan wisata, partisipasi dalam program pengembangan eksekutif, *time off.* Yang termasuk penghargaan negatif : campur tangan dari atasan, kehilangan pekerjaan, kenaikan gaji nol, penugasan pekerjaan tidak penting, tidak dinaikkan pangkatnya, demosi, dipermalukan secara umum, hukuman umum atau hukuman pribadi (Mulyadi, 2007).

BAB VI
GENERAL PRACTICE

The way general practices are contracted and funded is complex and very different from other parts of the health and care system. This explainer sets out how general practices are contracted and paid in England, looking at the services they are contracted to deliver,and the different streams of funding they receive.

A. What are general practices?

General practices are the small to medium-sized businesses whose services are contracted by NHS commissioners to provide generalist medical services in a geographical or population area. While

some general practices are operated by an individual GP, most general practices in England are run by a GP partnership. This involves two or more GPs, sometimes with nurses, practice managers and others (as long as at least one partner is a GP), working together as business partners, pooling resources, such as buildings and staff, and together owning a stake in the practice business. GP partners are jointly responsible for meeting the requirements set out in the contract for their practice and share the income it provides.

B. Salaried GPs

Some GPs work as salaried employees of a practice without owning a share in the overall business (so they are not GP partners). The British Medical Association (BMA) has a model salaried employment contract for these staff and practices with a General Medical Services (GMS) contract are required to offer this contract or an equal alternative to salaried GPs.

GP funding and contracts explained | The King's Fund 11/03/22 11.02

https://www.kingsfund.org.uk/publications/gp-funding-andcontracts-explained Page 2 of 8

Who commissions general practice?

Responsibility for commissioning primary care services, including general practice, sits formally with NHS England. However, over time clinical commissioning groups (CCGs) have increasingly taken on full or partial delegation of these commissioning powers for primary care now means most CCGs (have at least some responsibility for commissioning general practice in their local area, while keeping to national guidelines to ensure consistency.

(*https://www.england.nhs.uk/commissioning/pc-co comms/).*

What types of GP contracts are there?

Every individual or partnership of GPs must hold an NHS GP contract to run an NHS-commissioned general practice. These set out mandatory requirements and services for all general practices, as well making provisions for several types of other services that practices may also provide, if they so choose. There are three1 different types of GP contract arrangements used by NHS commissioners in England – General Medical Services (GMS), Personal Medical Services (PMS) and Alternative Provider Medical Services (APMS).

The GMS contract is the national standard GP contract. In 2018/19, around 70 per cent

(*https://digital.nhs.uk/data-and-information/ publications/statistical/nhs-payments-to-general practice/england-2018-19)* of GP practices operated under it2. This contract is negotiated nationally every year between NHS England and the General Practice Committee of the BMA, the trade union representative of GPs in England. It is then used by either NHS England and/or CCGs (depending on delegated powers) to contract local general practices in an area. The PMS contract is another form of core contract but unlike the GMS contract, is negotiated and agreed locally by CCGs or NHS England with a general practice or practices. This contract offers commissioners an alternative route with more flexibility to tailor requirements to local need while also keeping within national guidelines and legislation. The PMS contract is being phased out, but in 2018/19, 26 per cent of practices held one.

The APMS contract offers greater flexibility than the other two contract types. The APMS framework allows contracts with organisations (such as private companies or third sector providers) other than general practitioners/partnerships of GPs to provide primary care

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https://www.kingsfund.org.uk/publications/gp-funding-and-contracts-explained Page 3 of 8 services.

APMS contracts can also be used to commission other types of primary care service, beyond that of ‘core’ general practice. For example, a social enterprise could be contracted to provide primary health care to people who are homeless or asylum seekers. In 2018/19, 2 per cent of practices held this type of contract.

All types of contract are managed by the NHS commissioner (either NHS England or CCGs). Where contracts are negotiated locally, Local Medical Committees (https://www.bma.org.uk/what-we-do/local-medical-committees) representing GPs may advise or participate in discussions alongside regional BMA representation.

1. **A new Integrated Care Provider (ICP) contract**

   (/publications/integrated-care-systems-explained)has recently been made available to allow for greater integration of services. This can offer and additional contractingroute (https://www.england.nhs.uk/publication/gp-participation-in-an integrated-care-provider/) for general practice but there has been no uptake so far.

2. **Figures do not add up to 100 per cent** because in 2018/19 101 practices were listed with an unknown contract type.

What's in a GP contract?

The core parts of a general practice contract: agree the geographical or population area the practice will cover require the practice to maintain a list of patients for the area and sets out who this list covers and under what circumstances a patient might be removed from it establish the essential medical services a general practice must provide to its patients set standards for premises and workforce and requirements for inspection and oversight set out expectations for public and patient involvement outline key policies including indemnity, complaints, liability, insurance, clinical governance and termination of the contract.

In addition to these core arrangements, a general practice contract also contains a number of optional agreements for services that a practice might enter into, usually in return for additional payment. These include the nationally negotiated Directed Enhanced Services (DES) that all commissioners of general practice must offer in their contract and the locally negotiated and set Local Enhanced Services (LES) thatvary by area.

What services can practices be contracted to provide?

General practices are contracted to perform broadly five types of service for the NHS, although some are optional.

1. **Essential services are mandatory for a practice to deliver to registered patients and temporary residents in its practice area**. They include the

identification and management of illnesses, providing health advice and referral to other services. GPs are required to provide their essential services during core hours, which are 8.00am–6.30pm Monday to Friday, excluding bank holidays.

2. **Out-of-hours services are those provided outside core working hours.** A practice is assumed to provide these by default but can opt out. Where a practice opts out, as most practices do, commissioners have the responsibility for contracting a replacement service to cover the general practice area population.
3. **Additional services** include specific other clinical services that a practice is assumed to provide but can opt out of, for example, minor surgery.
4. **Enhanced services are nationally agreed services that holders of almost all GP contracts** (GMS/PMS/APMS) can also provide if they choose to opt in. Services specified for 2020/21 include some vaccination programmes and a health check scheme for people with learning disabilities. Primary care networks (PCNs) (see box below) have also been established via an enhanced service agreement.
5. **Locally commissioned services** are locally set services that practices can also opt in to. Unlike other GP services, these might also be commissioned by non-NHS organisations such as local authority public health departments. Examples include services for people who are sleeping rough or mental health support programmes. Primary care networks (PCNs) Almost all general practices in England are part of a PCN, a small group of practices usually within the same geographical area that work together under the PCN DES contract to gain some of the benefits of working at scale and access to additional funding.

How does the money flow?

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https://www.kingsfund.org.uk/publications/gp-funding-and-contracts-explained Page 5 of 8

The funding a general practice receives depends on a complex mix of different income streams. Much of a practice's income comes from its core contract agreements – meeting mandatory requirements, running essential services and operating additional and out-of-hours services where they have been agreed. This is known as the global sum payment.

However, a sizeable amount of a typical practice's income comes from other NHS sources such as the Quality and Outcomes Framework scheme (see below) or payments for providing enhanced services. Practices may also top up their NHS funding with fees for limited private services, such as sick certifications and travel prescribing. Most practice income is paid to the general practice rather than individual GPs.

Global sum payments

About half the money a practice receives is from the global sum payment – money for delivering the core parts of its contract. This includes payment for out-of-hours and additional services; if a practice opts out of these, percentage deductions are applied to the global sum payment to account for this. Global sum payments are based on an estimate of a practice's patient workload and certain unavoidable costs not on the actual recorded delivery of services. The global sum payment for each practice is based on a weighted sum for every patient on the practice list. The Carr-Hill formula is used to apply these weightings, which

account for factors such as age and gender. The global sum amount is reviewed quarterly to account for changes to the practice’s patient population

(https://www.bma.org.uk/advice-and-support/gp-practices/funding-and contracts/global-sum- allocation-formula) (eg, the additional costs of serving a rural or remote area or the effect of geography on staff markets and pay),

Quality and Outcomes Framework payments

The Quality and Outcomes Framework accounts for around 10 per cent of a practice’s income. The Quality and Outcomes Framework is a voluntary programme that practices can opt in to in order to receive payments based on good performance against a number of indicators. In 2018/19 more than 95 per cent of practices took part. The framework covers a range of clinical areas, for example, management of hypertension or asthma; prescribing safety; or ill health prevention activity. Each area has a range of indicators that equate to a number of Quality and Outcomes Framework points.

(https://digital.nhs.uk/data-and

information/publications/statistical/quality-and-

outcomes-framework-achievement-prevalence-and-GP

funding and contracts explained | The King's Fund

11/03/22 11.02

https://www.kingsfund.org.uk/publications/gp-funding-

and-contracts explained Page 6 of 8

Example indicator

Example indicator from The Quality and Outcomes Framework 2019/20RA002 – The percentage of patients with rheumatoid arthritis, on the register,who have had a face-to-face review in the preceding 12 months. Achievement threshold 40–90 per cent. Points: 5If 40 per cent of patients with rheumatoid arthritis have had a face-to-face reviewwith a health professional, the practice will receive 1 point. If 90 per cent of thesepatients have had a face-to-face review, the practice receives 5 points. Points areawarded proportionately for percentages between these boundaries. At the end of the financial year, the practice receives an amount of money, based onpoints achieved in the Quality and Outcomes Framework.

Premises payment

If a practice is leasing its premises, rent is generally reimbursed in full in arrears. If a partnership owns its premises, it is mortgage payments that are reimbursed, although most practice premises are leased. Some practices sub-let rooms to other providers (for example community health services providers) but there are rules on what a practice can use its building for, which affect reimbursement. Primary care organisation (PCO)-administered payments PCO-administered payments refers to payments by the local ‘primary care organisation’, ie, the CCG or NHS England depending on delegation of powers. Payments in this category include, for example, locum allowances and appraisal costs.

What do GPs spend their money on?

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https://www.kingsfund.org.uk/publications/gp-funding-and-contracts-explained Page 7 of 8 Source: GP income streams based on NHS payments recorded in NHS payments to general practice – England,2018/19(https://digital.nhs.uk/data-and information/publications/statistical/nhs-payments-to-general-practice/england-2018-19)

Paying its workforce – including salaried GPs, nurses, health care assistants andadministrative staff – accounts for the majority of a practice's costs. These staff are usually employed directly by the GP practice and not by the NHS and so are not subject to Agenda for Change arrangements (https://www.nhsemployers.org/pay-pensions-and-reward/agenda-for-change/how-agenda-for-change-works) .

Partners pay themselves from the money that remains after other expenditure has been accounted for. Part of this personal income is used to pay their pension contributions, tax, indemnity, General Medical Council and other subscriptions. Partners may also decide to reinvest some of the remaining income into the practice. It is important to note that partners in GP practices are also personally liable for any losses made by the practice.

What does it all mean?

GP partners are not just clinicians but also small business owners and employers. This comes with a number of challenges, for example, the need to manage and optimise complicated income streams and personal liability for financial risks. It also means partners have a strong vested interest in maintaining and developing their practice.

Historically, the major levers for setting national or local priorities and implementing service improvements across general practice have been contractual, for example, the Quality and Outcomes Framework, rather than based on national guidance. This is still the case, although rapid transformation in the services GPs are providing in response to Covid-19 is challenging this assumption. If local health systems are to achieve their full potential, a shared understanding of thedifferences between funding and contracting models for the different parts of that system will be important if partners are going to work effectively together.

The 2020/21 update to the GP contract explained NHS England and the British Medical Association's general practice committee have negotiated an update to the five-year GP contract framework published in January 2019. This explainer outlines the changes and explains what they mean for the future of general practice.

By Beccy Baird et al - 19 November 2020
(/publications/202021-update-gp-contract-explained)

**How has general practice responded to the Covid-19 (coronavirus)
outbreak?**

General practice has seen an incredible transformation in the space of just a few weeks, in response to the Covid-19 (coronavirus) outbreak. Beccy Baird reflects on the pace and scale of change, and whether the innovations are here to stay.

By Beccy Baird - 8 April 2020
(/blog/2020/04/covid-19-general-practice)

24 December 2021
NHS Providers | ON THE DAY BRIEFING | Page1

2022/23 operational planning guidanceOn Friday 24 December, NHS England and NHS Improvement (NHSE/I) published the 2022/23 operational planning guidance.

The priorities included in the document set out the task for the next financial year as the provider sector works to restore services, reduce the care backlog, and expand capacity. This briefing highlights the key takeaways from the guidance.

Key points

- NHSE/I have acknowledged that the immediate operational focus for trusts should be on delivering on the objectives set out in the recent letter, ‘Preparing the NHS for the potential impact of the Omicron variant’. The planning timetable and submission deadlines will therefore be extended to the end of April 2022 and draft plans will be due in mid-March.
- The detailed annexes on revenue and capital allocations have not yet been published. However senior leaders in NHSE/I hope to share more of the detail likely to be included in those ahead of its publication, through their finance networks.
- Given the uncertain timeframe for the passage of the Health and Care Bill, the move to placing integrated care systems (ICSs) on a statutory footing will be pushed back to 1 July 2022.
- The priorities set out in the planning guidance are based on COVID-19 activity and disruption returning to early summer 2021 levels.
- Systems are being asked to deliver on the following ten priorities:
    a. Investing in the workforce and strengthening a compassionate and inclusive culture
    b. Delivering the NHS COVID-19 vaccination programme

c. Tackling the elective backlog
d. Improving the responsiveness of urgent and emergency care and community care
e. Improving timely access to primary care
f. Improving mental health services and services for people with a learning disability and/or autistic people
g. Developing approach to population health management, prevent ill-health, and address health inequalities
h. H.Exploiting the potential of digital technologies
i. Moving back to and beyond pre-pandemic levels of productivity
j. Establishing ICBs and enablin collaborative system working

NHS Providers | ON THE DAY BRIEFING | Page 2

Summary of planning guidance Workforce The guidance is clear about the need to prioritise support for the NHS workforce, given theirexperience during the pandemic so far, and the efforts which are now being asked of them.

<u>Section A</u>

lists the priorities for workforce management in 2022/23:

- Look after our people by delivering the People Plan 2020/21, with particular focus on flexible working, career conversations, and supporting staff to understand pension options. Root causes of sickness absence should also be addressed, while supporting staff to access the ongoingvaccination programme, health and wellbeing support, and to rest.
- Improve belonging in the NHS by delivering the six high impact actions to overhaul recruitment and promotion practices and implementing plans to promote equality.

- Work differently by increasing new roles (e.g. anaesthetic associates), delivering care closer to home, e-job planning and e-rostering, and use of volunteers.
- Grow for the future with international recruitment of nurses and midwives, more collaborative staff banks (leading to less reliance on agency staff), protected time for supervisors to maintain doctors' education and training, and expanding clinical placement capacity for students. Support for these actions will come from Health Education England (HEE) and NHSE/I, focussing on:
- International nurse recruitment programme-eligibility will be expanded to include allied health professionals, but there is no clarity in the guidance on whether social care nurses can access this funding.
- Health care support workers
- Mental health hubs, with enhanced health and wellbeing offers for staff
- GP recruitment and retention
- Creating multi-disciplinary teams,particularly through delivery of the Additional Roles Reimbursement Scheme (ARRS) in Primary Care Networks (PCNs). Notably, there is no mention of this scheme taking staffing pressures across the system into account (for example, to manage the risk of creating additional vacancies across the paramedic workforce within ambulance trusts).Vaccines The guidance details the ask of the NHS to offer every eligible adult over the age of 18 a booster vaccination by 31 December 2021, and the ongoing prioritisation of the vaccination programme for the year ahead. Systems are therefore asked to maintain infrastructure to enable the service to respond to need in the vaccination programme as it arises.

The guidance notes the rollout of new COVID-19 treatments, initially for highest-risk patients, and the launch of a new study into the efficacy of antivirals. Updates on antiviral access are expected in spring.For post-COVID services, the guidance asks systems to increase the number of patients seen withinsix weeks and reduce the number of those waiting longer than 15 weeks. This will be supported by £90 million in 2022/23, which is particularly welcome for community providers, which have been at the forefront of delivering long COVID care. There are, however, concerns in the sector about workforce capacity required to deliver these services within a fixed term funding structure. Elective recovery, cancer waiting times and maternity services. Maximise elective activity and reduce long waits Systems must establish delivery plans across elective inpatient, outpatient and diagnostic services for 2022/23, outlining how they will meet the ambitions for elective recovery, including for systems to deliver over 10% more elective activity than before the pandemic and to reduce long waits. These plans should set out how disruptions will be minimised, clarify the use of local independent sector capacity, and show how systems will utilise additional capital and revenue funding and maximise productivity opportunities.

Systems should eliminate waits of over 104 weeks as a priority and maintain this position through 2022/23 (except where patients choose to wait longer), reduce waits of over 78 weeks, and reduce outpatient follow-ups by a minimum of 25% against 2019/20 activity levels by March 2023 (and going further where possible). The guidance also outlines plans to reduce outpatient follow-ups and to promote more personalised approaches to care As part of the additional revenue funding (over £8bn) for elective recovery announced in

September, £2.3 billion will be allocated to systems and tied to the delivery of the elective activity target. Systems must also show how their capital proposals will deliver an increase in elective activity to access the £1.5 billion capital funding announced in the Spending Review for surgical hubs and increased bed capacity.

Complete recovery and improve performance against cancer waiting times standards. The guidance urges systems to complete any outstanding work on the post-pandemic cancer recovery objectives set out in the 2021/22 H2 planning guidance. Cancer Alliances are asked to work with systems to develop and implement a plan to improve performance against all cancer standards, and to make progress against the ambition in the NHS long term plan (LTP) to diagnose more people.

With cancer at an earlier stage. Cancer Alliances and ICBs are also expected to ensure trusts have fully operational patient stratified follow-up (PSFU) pathways for breast, prostate, colorectal and one other cancer by early 2022/23 (and for two other cancers by March 2023), and to increase the recruitment and retention of the wider cancer workforce.

Diagnostics

The ambition is for systems to increase diagnostic activity to a minimum of 120% of pre-pandemic levels across 2022/23, and develop investment plans for further capacity expansion via community diagnostic centres (CDCs) in 2023/24 and 2024/25. Expanding supply of and training opportunities for the workforce will be facilitated by national investment through HEE. Systems will be able to access revenue to support set up and running of CDCs (following business case

approvals). £21m of programme funding will also support pathology and imaging networks to deliver diagnostic digital roadmaps 2022/23.

Systems are asked to utilise targeted system capital allocations to increase the number of endoscopy rooms, invest in CT capacity to support expansion of Target Lung Health Checks, develop additional digitally connected imaging capacity, ensure all acute sites have a minimum of two CT scanners, and procure new breast screening units. Operational capital resources should continue to be used to reduce the replacement backlog of diagnostic equipment replacement over 10 years old.Deliver improvements in maternity care ICBs are asked to undertake formal oversight of their Local Maternity Systems (LMS), and providers should continue to embed and deliver the seven immediate and essential actions identified in the interim Ockenden Review. £93m of funding to support the implementation of Ockenden actions (via workforce investment) will go into baselines from 2022/23.

LMSs should also continue to work with providers to implement local plans to deliver better births,including delivering local plans for midwifery continuity of carer (MCoC), offering every woman a personalised care and support plan in line with the personalised care and support planning guidance. LMSs must also implement the Saving Babies' Lives care bundle. UEC and community care To relieve pressure on urgent and emergency care, systems are expected to limit ambulance handover delays and improve response times; meet growing demand for NHS 111 by enhancing call.handling capacity; expand UTC to enable greater focus on higher acuity need within emergencydepartments; and increase focus on urgent care provision for children. Systems are asked to

reduce 12-hour waits in EDs towards zero and no more than 2%; improve against all Ambulance Response Standards, with plans to achieve Category 1 and Category 2 mean and 90th percentile standards; and minimise handover delays between ambulance and hospital.

Systems are asked to develop detailed plans to maximise the rollout of virtual wards by enablingearlier supported discharge and providing alternatives to admission. There is an expectation that by December 2023, systems will have moved towards a national ambition of 40–50 virtual wards per100,000 population. NHSE/I is making up to £200m available in 2022/23 and 2023/24 to support systems to implement virtual wards (including hospital at home services) to ease the pressure on acute bed capacity. Systems will need to develop two-year plans collaboratively across providers (and the independent sector) to maximise the rollout of virtual wards, which NHSE/I expects to have taken place by December 2023. These virtual wards will be used for patients who would otherwise be admitted to an NHS acute hospital bed or to facilitate early discharge. System partners are also asked to plan to reduce backlogs of care and waiting times for community services Systems are asked to deliver the LTP goal of responsive, personalised community-based care. Thisincludes enhanced health in care homes; improving quality and availability against national data requirements; and embedding urgent community response with services achieving at least 70% twohour response times from the end of Q3 2022.

As central discharge to assess funding will end in March 2022, NHSE/I is asking systems to sustain improvements in delayed discharges in 2022/23 by working with local authorities supported by theBetter

Care Fund, and via investment in virtual wards.Letters and supporting documents on safe and timely discharge Related to the planning guidance, on 22 December NHSE/I issued two letters and several supporting documents to enable the safe and timely discharge of patients from acute care. NHSE/I wrote to acute and community trusts calling for a “forensic focus” on embedding systems, processes andpractical arrangements that enable discharges.NHSE/I also sent a second letter asking the NHS and local authorities to increase support fordomiciliary care; maximise alternative pathways to acute admission (e.g. expanding virtual wardcapacity as fast as practicable); increase bed capacity in care centres (including care homes, hospices and hotels); and support actions taken by NHS acute hospitals. ICSs should plan by the end of December to provide COVID virtual wards that are of equivalent size to a minimum of 15% of peoplewho are COVID+ as inpatients. ICSs will need to report to NHSE/I with the total new capacity theyplan to create by 24 December.

NHS Providers | ON THE DAY BRIEFING | Page 6

Primary care

The guidance outlines the LTP’s commitment to a £4.5 billion increase in real terms investment intoprimary medical and community services by 2023/24. ICBs will be expected to maximise the impact oftheir investment in primary care and PCNs by driving integrated working at neighbourhood/placelevel, and including primary care as part of the solution to system-wide challenges. ICBs will be thedelegated commissioners for primary medical services in 2022/23 and should develop plans to takedental, community pharmacy and optometry commissioning functions from 2023/24.

Expanding the primary care workforce is a key priority, and all systems are expected to support theirPCNs to fill their share of the 20,500 FTE PCN roles by the end of 2022/23, and to increase thenumber of GPs towards the 6,000 FTE target (commensurate with the October 2021 plan).

To improve access to primary care, systems have also been asked to implement revised accessarrangements via PCNs; secure universal participation in the community pharmacist consultationservice to divert lower acuity care away from general practice and 111; and support practices andPCNs to ensure every patient can be offered digital-first primary care by 2023/24.Mental health, learning disability and autism

Mental health services

The guidance acknowledges that the complexity of demand has increased because of the pandemic and this, in addition to a pre-existing treatment gap within mental health, is increasing pressureswithin services and pathways across all ages. To address these pressures systems are asked to:

- increase the provision of alternatives to A&E and improve the ambulance mental health response.
- ensure admissions are intervention-focused, therapeutic, and supported by multidisciplinary teams.
- maintain a focus on improving equalities across all programmes, noting the actions and resources identified in the advancing mental health equalities strategy.
- continue expansion and transformation of services. The guidance signposts to the 2022/23 mental health delivery plan to support systems in understanding their delivery requirements.

On funding, the guidance confirms the delivery of the MHIS remains a mandatory requirement, andthat system development funding (SDF) will continue beyond 2023/24. Capital funding madeavailable through system allocations is expected to support urgent patient safety projects for mentalhealth trusts, and funding to eradicate mental health dormitories will continue in 2022/23 and2023/24.To support the expansion and transformation of the workforce, systems are asked to develop amental health workforce plan to 2023/24 in collaboration with mental health providers, HEE andpartners in the voluntary care and social enterprise (VCSE) andeducation sectors.People with a learning disability and autistic people.

The guidance recognises the pandemic has exacerbated the significant health inequalities experienced by people with a learning disability and autistic people. This means making reasonable adjustments and tailored responses, including considering the ongoing need for face-to-faceappointments as digital healthcare develops.

Service development funding support of £75 million will be made available to systems in 2022/23 tosupport people with a learning disability and autistic people. This will help increase the rate of annualhealth checks for people aged 14 and over on a GP learning disability register towards the 75%ambition in 2023/24; improve the accuracy of GP learning disability registers, particularly for underrepresented groups such as children and young people and people from ethnic minority groups; andimplement actions from Learning Disability Mortality Reviews (LeDeRs).

Health inequalities

The guidance sets out the ambition to continue to develop approaches to population health management and prevention, with ICSs driving the shift towards targeting interventions and supporting prevention as well as treatment. Systems are asked to develop plans by June 2022 to put in place the systems, skills and data safeguards necessary for robust population health management, and to have the technical capability in place by April 2023. This includes the capacity to use data and analytics to redesign care pathways and measure outcomes with a focus on improving access and health equity for underserved communities. The guidance reiterates the importance of adopting culturally competent approaches to increasing vaccination uptake.

Systems are asked to develop robust plans for the rollout of tobacco dependence services, improve uptake of lifestyle services including the diabetes prevention programme, and restore diagnosis and monitoring of long term conditions including hypertension, atrial fibrillation and diabetes. There should be further progress across the LTP's high impact actions, across respiratory, stroke and cardiaccare, with the target of restoring detection and management of hypertension, atrial fibrillation and high cholesterol to pre-pandemic levels. Systems are also asked to nominate a senior responsible officer covering prevention deliverables.

Digital

The guidance confirms systems will be allocated capital over three years from 2022/23 for digital investment. £250m of capital funding will initially be made available to systems in 2022/23 to support the digitisation of services and settings that are currently the least digitally mature. Providers must meet the LTP objective of reaching a core level of digitisation by

March 2025. Costed three-year digital investment plans should be completed by June 2022 to meet expectations set out in the What Good Looks Like framework.

Systems are expected to exchange information across their collaboratives and ensure supplierscomply with interoperability standards. By March 2023, local authorities with care responsibilities within a system's footprint should be connected to their local shared care record. The long-term ambition is for the NHSE e-Referral Service (e-RS) to become an 'any-to-any health sector triage, referral and booking system' by 2025.System allocations and financial regime

The detailed annexes on contracting and revenue and capital allocations have not yet beenpublished. However senior leaders in NHSE/I hope to share more of the detail likely to be included inthose ahead of its publication, through their finance networks. NHSE/I plans to shortly issue one-yearrevenue allocations to 2022/23 and three-year capital allocations to 2024/25, and intends to issue the remaining revenue allocations over the SR period in the first half of 2022/23.nThe planning guidance does however broadly outline the role of the 2022/23 financial regime inenabling a system-wide approach to planning and delivery, including:

- Efficiency ask: the planning guidance assumes the provider sector will return (and go beyond) prepandemic productivity allows 'when the context allows'.
- Returning to fair shares allocations: NHSE/I will continue to enable a system-based approach to funding and planning by issuing ICB revenue allocations (based on current system funding envelopes). On top of the efficiency ask, NHSE/I will

apply a convergence adjustment and map out a glidepath from current system revenue envelopes to ‘fair shares’ allocations.

- Clarity over capital allocations: multi-year operational capital allocations will be set at ICB level, and NHSE/I will provide further clarity about the allocation of national capital programmes.
- Financial balance at system level: ICBs and partner trusts are collectively tasked with delivering a breakeven financial position across their system and, although possibly delayed, the Health and Care Bill will hold ICBs and trusts responsible for their use of revenue and capital resources.
- Contracts and locally determined prices: providers are expected to return to signed contracts and local ownership for setting payment values (additional guidance will be provided by NHSE/I). Written contracts should be signed before the start of the financial year. The guidance also recommends systems and organisations sustain a ‘partnership approach’ payment and contracting. The final version of the NHS Standard Contract will be published in February 2022.

Enabling elective recovery: as highlighted above, additional revenue and capital funding will support systems deliver the ambitions for elective recovery.nICBs and collaborative system working Given the uncertain timeframe for the passage of the Health and Care Bill, the move to placing integrated care systems (ICSs) on a statutory footing will be pushed back to 1 July 2022. Timelines for national and local plans will therefore be adjusted. An extended ‘preparatory phase’ will begin from 1 April 2022 whereby clinical commissioning groups (CCGs) remain

in place as statutory organisations, and CCG leaders are expected to work closely with designate ICB leaders on issues likely to affect future ICBs (particularly commissioning and contracting). In Q4 2021/22 NHSE/I will consult with several CCGs about boundary changes to ensure they align with the ICS boundary changes announced in July 2021. NHSE/I does not plan any further CCG mergers before the establishment ofICBs. CCGs and ICBs should reset their implementation plans and ensure people, property and liabilities are appropriately and safely transferred from CCGs to future ICBs. This also means designate ICB chairs and chief executives should continue with recruitment plans. NHSE/I regional teams, designate ICB leaders, and CCG accountable officers should agree ways of working for 2022/23 by the end of March 2022. The deadline for ICB Readiness to Operate and System Development Plan submissions will be extended (with details about these plans to be set out in January 2022). ICBs refreshed five-year plans are expected in March 2023, and ICBs are expected to undertake preparatory work throughout 2022/23 in collaboration with local authority partners.

NHS Providers | ON THE DAY BRIEFING | Page 10
NHS Providers view

We welcome the pragmatic approach in the planning guidance, resetting priorities while signalling that these will need to be kept under review.The scope and scale of these actions highlights the formidable array of challenges facing the NHS.These include the impact of Omicron and the booster vaccination programme against a backgroundof unprecedented demand for urgent and emergency care and the need to address the treatmentbacklog in hospitals, community and mental health services, and the need for urgent capitalinvestment.All of the priorities in the

guidance are important, and we particularly welcome the prominence givento growing, adapting and focusing on the wellbeing of the workforce. Eight of the nine priorities inthis programme won’t be fully possible without addressing the first – securing a properly costed and fundednworkforce plan is fundamental to the future success of the NHS. Trusts tell us that workforce capacity is the constraining factor in the health and care system at the moment underpinned by a lack of national long term plan, challenges with recruitment and rising staff absences connected with COVID-19.

While recognising the fundamental importance of elective recovery, this cannot be accomplished without stabilising the situation in urgent and emergency care, primary care and social care andaddressing growing demand and a backlog of care in community and mental health services.

Quality of care and patient safety need to remain the key cornerstones for the NHS. For example we have seen a worrying shift in patient safety risk towards ambulance services, particularly as a result of handover delays. The NHS also needs to transform to meet future needs – taking much greater advantage of digital technology and the leap forward offered by 21st century genomic based medicine.We also need to do much more to help citizens manage their own health and wellbeing more effectively, with greater focus on tackling health inequalities, prevention and whole population health management.

NHS Providers | ON THE DAY BRIEFING | Page 11

Key to delivery of these changes will be the development of system working and integrated care systems (ICSs) enshrined in forthcoming legislation. While some trusts will be disappointed to hear of the

delay in placing ICSs on a statutory footing, many will also see it as a pragmatic response to potential delays. Trusts need to be at thenforefront of this transformational change, which offers huge opportunities to improve services for patients and communities, and it will be important to keep sight of thesenopportunities, alongside the massive challenge of dealing with immediate operational pressures.

BAB VII
KONFLIK DALAM ORGANISASI

A. Latar Belakang Tentang Konflik

Konflik secara estimologi berasal dari kata kerja Latin yaitu "con" yang artinya bersama dan "fligere" yang artinya benturan atau bertabrakan. Secara umum, konflik merupakan suatu peristiwa atau fenomena sosial di mana terjadi pertentangan atau pertikaian baik antar individu dengan individu, individu dengan kelompok, kelompok dengan kelompok, maupun kelompok dengan pemerintah. Konflik bertentangan dengan integrasi. Konflik dan integrasi berjalan sebagai sebuah siklus di masyarakat.Konflik yang terkontrol akan menghasilkan integrasi. Sebaliknya,integrasi atau persatuan yang tidak sempurna dapat menciptakan konflik, karena beda pendapat.

Tidak satu masyarakat pun yang tidak pernah mengalami konflik antar anggotanya atau dengan kelompok masyarakat lainnya, konflik hanya akan hilang bersamaan dengan hilangnya masyarakat itu sendiri. Konflik dilatarbelakangi oleh perbedaan ciri-ciri yang dibawa individu dalam suatu interaksi. Perbedaan-perbedaan tersebut diantaranya adalah menyangkut ciri fisik, pengetahuan, adat istiadat, keyakinan, gagasan, dan lain sebagainya. Dengan dibawa sertanya ciri-ciri individual dalam interaksi sosial, konflik merupakan situasi yang wajar dalam setiap masyarakat dan tidak satu masyarakat pun yang tidak pernah mengalami konflik antar anggotanya atau dengan kelompok masyarakat lainnya, konflik hanya akan hilang bersamaan hilangnya masyarakat itu sendiri

Konflik Menurut Stephen W. Robbin

Seorang penulis buku perilaku organisasi bernama Robbin mengatakan konflik dalam organisasi disebut sebagai *The Conflict Paradoks*. Yaitu pandangan bahwa di sisi konflik dianggap dapat meningkatkan kinerja kelompok, tetapi di sisi lain kebanyakan kelompok dan organisasi berusaha untuk meminimalisasikan konflik Pandangan ini dibagi menjadi tiga bagian, antara lain:

Pandangan tradisional (*The Traditional View*). Pandangan ini menyatakan bahwa konflik itu hal yang buruk, sesuatu yang negatif, merugikan, dan harus dihindari. Konflik disetarakan dengan istilah kekerasan (*violence*), kerusakan (destruction), dan tidak rasional (irrationality). Konflik ini merupakan suatu hasil disfungsional akibat komunikasi yang buruk, kurang kepercayaan, keterbukaan di antara orang – orang, dan kegagalaan manajer untuk tanggap terhadap kebutuhan dan aspirasi karyawan.

Pandangan hubungan manusia *(The Human Relation View).* Pandangan ini menyatakan bahwa konflik dianggap sebagai suatu peristiwa yang wajar terjadi di dalam kelompok atau organisasi. Konflik dianggap sebagai sesuatu yang tidak dapat dihindari karena di dalam kelompok atau organisasi pasti terjadi perbedaan pandangan atau pendapat antar anggota. Oleh karena itu, konflik harus dijadikan sebagai suatu hal yang bermanfaat guna mendorong peningkatan kinerja organisasi. Dengan kata lain, konflik harus dijadikan sebagai motivasi untuk melakukan inovasi atau perubahan di dalam tubuh kelompok atau organisasi.

Pandangan interaksionis (*The Interactionist View).* Pandangan ini cenderung mendorong suatu kelompok atau organisasi terjadinya konflik. Hal ini disebabkan suatu organisasi yang kooperatif, tenang, damai, dan serasi cenderung menjadi statis, apatis, tidak aspiratif, dan tidak inovatif. Oleh karena itu, menurut pandangan ini, konflik perlu dipertahankan pada tingkat minimum secara berkelanjutan sehingga tiap anggota di dalam kelompok tersebut tetap semangat, kritis diri, dan kreatif.

Konflik Menurut Stoner dan Freeman

Peneliti manajemen Stoner dan Freeman membagi pandangan menjadi dua bagian, yaitu pandangan tradisional dan pandangan modern. Pandangan tradisional menganggap bahwa konflik dapat dihindari. Hal ini disebabkan konflik dapat mengacaukan organisasi dan mencegah pencapaian tujuan yang optimal. Oleh karena itu, untuk mencapai tujuan yang optimal, konflik harus dihilangkan. Konflik biasanya disebabkan oleh kesalahan manajer dalam merancang dan memimpin organisasi. Dikarenakan kesalahan ini, manajer sebagai pihak manajemen bertugas meminimalisasikan konflik dan mendamaikan anggota organisasi

Pandangan modern konflik tidak dapat dihindari. Hal ini disebabkan banyak faktor, antara lain struktur organisasi, perbedaan tujuan, persepsi, nilai – nilai, dan sebagainya. Konflik dapat mengurangi kinerja organisasi dalam berbagai tingkatan. Jika terjadi konflik, manajer sebagai pihak manajemen bertugas mengelola konflik sehingga tercipta kinerja yang optimal untuk mencapai tujuan bersama.

Konflik Lewis A. Coser

Menurut Coser dalam tulisannya yang berjudul *The Functions of Social Conflict*, ia mendefinisikan konflik sebagai perebutan nilai dan klaim atas status, kekuasaan, dan sumber daya yang langka di mana tujuan lawannya adalah untuk menetralkan, melukai atau melumpuhkan pihak yang menjadi lawan. Coser juga berpendapat bahwa konflik merupakan proses yang bersifat instrumental dalam membentuk, menyatukan, dan memelihara struktur social.Terjadinya konflik diantara satu kelompok dengan kelompok yang lain dapat memperkuat dan melindungi identitas kelompok sehingga tidak melebur dengan dunia sosial sekelilingnya. Tidak terjadinya konflik di dalam suatu kelompok menunjukkan integrasi kelompok yang lemah dengan masyarakat. Coser menganggap bahwa konflik tidak bisa hanya dipandang dalam pandangan negatif saja karena perbedaan adalah suatu hal yang normal yang sebenarnya berdampak pada memperkuat struktur sosial. Dengan begitu, Coser menolak pandangan bahwa tidak adanya konflik yang terjadi dalam suatu kelompok menjadi indikator kekuatan dan kestabilan dari suatu hubungan.

Konflik Menurut Ahli lainnya *Soerjono Soekanto* memberikan definisi konflik sebagai proses pencapaian tujuan dengan cara melemahkan pihak lawan, tanpa memperhatikan norma dan nilai yang berlaku. Paul Conn berpendapat bahwa konflik merupakan sebuah aktivitas yang bertujuan untuk mempengaruhi proses dari pembentukan dan pelaksanaan kebijakan sebagai sebuah upaya untuk mendapatkan atau mempertahankan nilai-nilai Robert Lawang berpendapat bahwa konflik dapat diartikan sebagai benturan kekuatan dan kepentingan antara satu kelompok dengan kelompok

lain dalam proses perebutan sumber-sumber kemasyarakatan (ekonomi, politik, sosial dan budaya) yang relatif terbatas. Menurutnya, konflik juga dapat diartikan sebagai sebuah perjuangan dalam memperoleh nilai, status, kekuasaan, dan sebagainya yang mana tujuan dari konflik itu sendiri bukan hanya untuk memperoleh keuntungan namun untuk menundukkan lawannya dan meraih keinginan diri sendiri.

Konflik terjadi karena adanya interaksi yang disebut komunikasi. Hal ini dimaksudkan apabila kita ingin mengetahui konflik berarti kita harus mengetahui kemampuan dan perilaku komunikasi. Semua konflik mengandung komunikasi, tapi tidak semua konflik berakar pada komunikasi yang buruk. Menurut *Myers,* Jika komunikasi adalah suatu proses transaksi yang berupaya mempertemukan perbedaan individu secara bersama-sama untuk mencari kesamaan makna, maka dalam proses itu, pasti ada konflik. Konflik pun tidak hanya diungkapkan secara verbal tapi juga diungkapkan secara nonverbal seperti dalam bentuk raut muka, gerak badan, yang mengekspresikan pertentangan. Konflik tidak selalu diidentifikasikan sebagai terjadinya saling baku hantam antara dua pihak yang berseteru, tetapi juga diidentifikasikan sebagai 'perang dingin' antara dua pihak karena tidak diekspresikan langsung melalui kata – kata yang mengandung amarah.

Konflik tidak selamanya berkonotasi buruk, tapi bisa menjadi sumber pengalaman positif. Hal ini dimaksudkan bahwa konflik dapat menjadi sarana pembelajaran dalam memanajemen suatu kelompok atau organisasi. Konflik tidak selamanya membawa dampak buruk, tetapi juga memberikan pelajaran

dan hikmah di balik adanya perseteruan pihak – pihak yang terkait. Pelajaran itu dapat berupa bagaimana cara menghindari konflik yang sama supaya tidak terulang kembali pada masa yang akan datang dan bagaimana cara mengatasi konflik yang sama apabila sewaktu – waktu terjadi kembali.

Penyebab konflik perbedaan individu, yang meliputi perbedaan pendiri. Setiap manusia adalah individu yang unik. Artinya, setiap orang memiliki pendirian dan perasaan yang berbeda-beda satu dengan lainnya. Perbedaan pendirian dan perasaan akan sesuatu hal atau lingkungan yang nyata ini dapat menjadi faktor penyebab konflik sosial, sebab dalam menjalani hubungan sosial, seseorang tidak selalu sejalan dengan kelompoknya. Misalnya, ketika berlangsung pentas musik di lingkungan pemukiman, tentu perasaan setiap warganya akan berbeda-beda dan persepsi setiap orang berbeda pula.

Manusia memiliki perasaan, pendirian maupun latar belakang kebudayaan yang berbeda. Oleh sebab itu, dalam waktu yang bersamaan, masing-masing orang atau kelompok memiliki kepentingan yang berbeda-beda. Kadang-kadang orang dapat melakukan hal yang sama, tetapi untuk tujuan yang berbeda-beda. Sebagai contoh, misalnya perbedaan kepentingan dalam hal pemanfaatan hutan. Para tokoh masyarakat menanggap hutan sebagai kekayaan budaya yang menjadi bagian dari kebudayaan mereka sehingga harus dijaga dan tidak boleh ditebang. Para petani menbang pohon-pohon karena dianggap sebagai penghalang bagi mereka untuk membuat kebun atau ladang. Bagi para pengusaha kayu, pohon-pohon ditebang dan kemudian kayunya diekspor guna mendapatkan uang dan membuka pekerjaan. Sedangkan bagi

pecinta lingkungan, hutan adalah bagian dari lingkungan sehingga harus dilestarikan. Di sini jelas terlihat ada perbedaan kepentingan antara satu kelompok dengan kelompok lainnya sehingga akan mendatangkan konflik sosial di masyarakat. Konflik akibat perbedaan kepentingan ini dapat pula menyangkut bidang politik, ekonomi, sosial, dan budaya. Begitu pula dapat terjadi antar kelompok atau antara kelompok dengan individu, misalnya konflik antara kelompok buruh dengan pengusaha yang terjadi karena perbedaan kepentingan di antara keduanya. Para buruh menginginkan upah yang memadai, sedangkan pengusaha menginginkan pendapatan yang besar untuk dinikmati sendiri dan memperbesar bidang serta volume dan keuntungan usaha mereka.

Perubahan-perubahan nilai yang cepat dan mendadak dalam masyarakat Perubahan adalah sesuatu yang lazim dan wajar terjadi, tetapi jika perubahan itu berlangsung cepat atau bahkan mendadak, perubahan tersebut dapat memicu terjadinya konflik sosial. Misalnya, pada masyarakat pedesaan yang mengalami proses industrialisasi yang mendadak akan memunculkan konflik sosial sebab nilai-nilai lama pada masyarakat tradisional yang biasanya bercorak pertanian secara cepat berubah menjadi nilai-nilai masyarakat industri. Nilai-nilai yang berubah itu seperti nilai kegotongroyongan berganti menjadi nilai kontrak kerja dengan upah yang disesuaikan menurut jenis pekerjaannya. Hubungan kekerabatan bergeser menjadi hubungan struktural yang disusun dalam organisasi formal perusahaan. Nilai-nilai kebersamaan berubah menjadi individualis dan nilai-nilai tentang pemanfaatan waktu yang cenderung tidak ketat berubah menjadi pembagian waktu yang tegas

seperti jadwal kerja dan istirahat dalam dunia industri. Perubahan-perubahan ini, jika terjadi seara cepat atau mendadak, akan membuat kegoncangan proses-proses sosial di masyarakat, bahkan akan terjadi upaya penolakan terhadap semua bentuk perubahan karena dianggap mengacaukan tatanan kehiodupan masyarakat yang telah ada.

B. Jenis-jenis konflik

Menurut *Dahrendorf,* konflik dibedakan menjadi 7 macam Konflik antara atau dalam peran sosial (intrapribadi), misalnya antara peranan-peranan dalam keluarga atau profesi (konflik peran), konflik antara kelompok-kelompok sosial (antar keluarga,konflik kelompok terorganisir dan tidak terorganisir, konflik antar satuan nasional (kampanye, perang saudara),konflik antar atau tidak antar agama, konflik individu dengan kelompok. Selain itu terdapat berbagai macam konflik yang dikelompokkan dalam beberapa jenis antara lain sebagai berikut

C. Macam-macam konflik berdasarkan pihak yang terlibat

Konflik dalam diri individu (*conflict within the individual*), adalah konflik yang terjadi karena memilih tujuan yang saling bertentangan, atau karena tuntutan tugas yang terlampau banyak untuk di tinggalkan,konflik antar-individu (conflict among individual), adalah konflik yang terjadi karena adanya perbedaan kepribadian antara individu yang satu dengan individu yang lainnya,konflik antar individu dan kelompok (conflict among individual and groups), adalah konflik yang terjadi karena terdapat individu yang gagal beradaptasi dengan norma-norma kelompok dimana tempat ia bekerja, konflik antar kelompok dalam organisasi yang sama (conflict

among groups in the same organization) adalah konflik yang terjadi karena setiap kelompok memiliki tujuan tersendiri dan berbeda yang ingin di capai dan tidak dapat mengontrol emosi.

Konflik antar organisasi (conflict among organization), adalah konflik yang terjadi karena tindakan yang dilakukan oleh anggota organisasi yang menimbulkan dampak negatif bagi anggota organisasi lain,konflik antar individu dalam organisasi yang berbeda (conflict among individual in different organization), adalah konflik yang terjadi karena sikap atau perilaku anggota organisasi yang berdampak negatif anggota organisasi lain apalagi sebenarnya tidak berurusan langsung

1. **Macam-macam konflik berdasarkan fungsinya**
   - Konflik konstruktif, adalah konflik yang mempunyai nilai positif kepada pengembangan organisasi.
   - Konflik destruktif, adalah konflik yang memiliki dampak negatif kepada pengembangan organisasi

2. **Macam-macam konflik berdasarkan posisi seseorang dalam struktur organisasi**
   - Konflik vertikal, adalah konflik yang terjadi antara karyawan yang memiliki jabatan yang tidak sama dengan dalam organisasi
   - Konflik horizontal, adalah konflik yang terjadi karena memiliki kedudukan/jabatan yang sama atau setingkat dalam organisasi
   - Konflik garis staf, adalah konflik yang terjadi karyawan yang memegang posisi komando, dengan pejabat staf sebagai penasehat dalam organisasi
   - Konflik peran, adalah konflik yang terjadi karena individu memiliki peran yang lebih dari satu

3. **Macam-macam konflik berdasarkan dampak yang timbul**
   - Konflik fungsional, adalah konflik yang memberikan manfaat atau keuntungan bagi organisasi yang dapat dikelola dan dikendalikan dengan baik
   - Konflik Infungsional, adalah konflik yang dampaknya merugikan orang lain.

4. **Macam-macam konflik berdasarkan sumber konflik**

- Konflik tujuan, adalah konflik yang terjadi karena adanya perbedaan individu, organisasi atau kelompok yang memunculkan konflik

- Konflik peranan, adalah konflik yang terjadi karena terdapat peran yang lebih dari satu.
- Konflik nilai, adalah konflik yang terjadi karena adanya perbedaan nilai yang dianut oleh seseorang berbeda dengan nilai yang dianut oleh organisasi atau kelompok.
- Konflik kebijakan, adalah konflik yang terjadi karena individu atau kelompok tidak sependapat dengan kebijakan yang diambil oleh organisasi.

5. **Macam-macam konflik berdasarkan bentuknya**
   - Konflik realistis, adalah konflik yang terjadi karena kekecewaan individu atau kelompok atas tuntutannya.
   - Konflik nonrealistif, adalah konflik yang terjadi karena kebutuhan yang meredakan ketegangan.

6. **Macam-macam konflik berdasarkan tempat terjadinya**
   - Konflik in-group, adalah konflik yang terjadi dalam kelompok atau masyarakat sendiri
   - Konflik out-group, adalah konflik yang terjadi antara suatu kelompok atau masyarakat dengan suatu kelompok atau masyarakat lain

.

D. Akibat konflik

Hasil dari sebuah konflik adalah sebagai berikut :

Meningkatkan solidaritas sesama anggota kelompok (ingroup) yang mengalami konflik dengan

kelompok lain keretakan hubungan antar kelompok yang bertikai perubahan kepribadian pada individu, misalnya timbulnya rasa kerusakan harta benda dan hilangnya jiwa manusia dominasi bahkan penaklukan salah satu pihak yang terlibat dalam konflik. Para pakar teori telah mengklaim bahwa pihak-pihak yang berkonflik dapat menghasilkan respon terhadap konflik menurut sebuah skema dua-dimensi; pengertian terhadap hasil tujuan kita dan pengertian terhadap hasil tujuan pihak lainnya.

Kontingensi lelucon dan diplomasi

Humor adalah bentuk komunikasi dengan tingkat kontingensi yang tinggi, karena selalu ada ketidakpastian yang cukup besar tentang apakah pesan diterima dengan cara yang diinginkan. Lelucon yang sama mungkin berhasil pada satu kesempatan tetapi bisa gagal total pada kesempatan lain. Kontingensi dan volatilitas humor ini sebagian berakar pada fakta bahwa lelucon bekerja dengan cara tidak mencantumkan. Agar sebuah lelucon memiliki pengaruh, lelucon itu harus singkat, padat, dan tidak boleh menyertakan penjelasan, karena dengan menjelaskan lelucon itu kehilangan kekuatan retorikanya. Artinya, saat membuat lelucon, kita harus selalu berasumsi bahwa audiens target memiliki latar belakang pengetahuan yang diperlukan untuk 'mengisi celah' dan memahami mengapa ucapan itu lucu, mengapa ucapan itu tidak sesuai dengan situasi tertentu, dan apa yang paradoks atau absurd yang seharusnya membuat kita tersenyum. Dougherty dalam artikelnya tentang penggunaan kartun di kelas menunjukkan bahwa agar penonton 'untuk mendapatkan' kartun politik, mereka harus terbiasa dengan latar belakang sejarah, dengan kejadian terkini dan simbol budaya dan politik yang digunakan (Dougherty, 2002) .7

Namun ini sering hilang dalam pengaturan lintas budaya. Misalnya, pada Februari 2015, majalah satir Prancis Fluide Glacial menerbitkan terbitan berjudul: Péril Kontinjensi lelucon dan diplomasi.

Humor adalah bentuk komunikasi dengan tingkat kontingensi yang tinggi, karena selalu ada ketidakpastian yang cukup besar tentang apakah pesan diterima dengan cara yang diinginkan. Lelucon yang sama mungkin berhasil pada satu kesempatan tetapi bisa gagal total pada kesempatan lain. Kontingensi dan volatilitas humor ini sebagian berakar pada fakta bahwa lelucon bekerja dengan cara tidak mencantumkan. Agar sebuah lelucon memiliki pengaruh, lelucon itu harus singkat, padat, dan tidak boleh menyertakan penjelasan, karena dengan menjelaskan lelucon itu kehilangan kekuatan retorikanya. Artinya, saat membuat lelucon, kita harus selalu berasumsi bahwa audiens target memiliki latar belakang pengetahuan yang diperlukan untuk 'mengisi celah' dan memahami mengapa ucapan itu lucu, mengapa ucapan itu tidak sesuai dengan situasi tertentu, dan apa yang paradoks atau absurd yang seharusnya membuat kita tersenyum. Dougherty dalam artikelnya tentang penggunaan kartun di kelas menunjukkan bahwa agar penonton 'untuk mendapatkan' kartun politik, mereka harus terbiasa dengan latar belakang sejarah, dengan kejadian terkini dan simbol budaya dan politik yang digunakan (Dougherty, 2002)

E. Kesimpulan Tentang Konflik

Konflik merupakan realita hidup, mau tidak mau, suka atau tidak, cepat atau lambat pada suatu saat dalam menjalani kehidupannya orang pasti akan menghadapinya hanya saja tergantung besar kecilnya tingkat konflik yang dihadapi. Dalam

kehidupan sosial sehari-hari konflik dapat timbul dan muncul kapan saja dimana saja. Konflik juga bisa dialami oleh siapa saja tidak pandang bulu, orang tua, remaja, anak-anak, pria, wanita, orang terpelajar, orang awam, orang miskin, jutawan atau siapapun yang hidup di tengah pergaulan umum pasti akan menghadapi dan mengalami konflik.Konflik ibarat suatu penyakit yang menyerang tubuh kita, maka kita harus tahu apa jenis dan penyebab yang menimbulkan penyakit tersebut. Setelah mengenali jenis dan penyebabnya kita juga harus mengetahui obat penangkal yang cocok untuk mencegah, mengobat menanggulanginya. Kecepatan dalam menganalisa penyebab dan menanggulangi konflik akan menentukan eksalasi konflik yang timbul. Pimpinan yang memiliki kepekaan atas masalah organisasi dan tanggap terhadap situasi akan mampu dengan cepat meminimalisir terjadinya konflik

Ada beberapa jenis konflik yang umum dan sering muncul dalam suatu organisasi/perusahaan antara lain: (1) konflik peranan yang terjadi di dalam diri seseorang person-role conflict), (2) konflik antar peranan (inter-role conflict), (3) konflik yang timbul karena seseorang harus memenuhi harapan beberapa orang (intersender conflict), (4) konflik yang timbul karena disampaikannya informasi yang saling bertentangan (intrasender conflict). Berdasarkan sumbernya, konflik dalam organisasi muncul karena beberapa sebab seperti: (1) konflik individu, (2) konflik antar individu, (3) konflik kelompok, (4) konflik internal kelompok organisasi, dan (5) konflik kelompok dengan organisasi lainnya.

Konflik yang muncul dalam suatu organisasi akan mengganggu kelancaran hubungan antar

individu dalam organisasi. Apabila hubungan antar individu terganggu akibat adanya konflik maka pribadi-pribadi yang berkonflik akan merasakan suasana kerja menjadi tertekan. Orangorang yang bekerja di bawah tekanan dapat mengakibatkan menurunnya tingkat motivasi kerja. Akibat dari semua itu prestasi kerja berkurang sehingga secara luas hal tersebut akan mengakibatkan produktivitas kerja pribadi dan organisasi/perusahaan menurun. Pada dasarnya konflik memiliki dua sisi yang berbeda, di satu sisi konflik bisa bermanfaat secara positif, tetapi pada sisi lain juga membawa dampak negatif baik bagi orang-orang yang berkonflik maupun organisasi secara luas. Manfaat secara positif adanya konflik organisasi antara lain: (1) organisasi menjadi lebih dinamis, (2) konflik sebagai suatu kejadian, dapat dipakai sebagai pengalaman berharga, (3) konflik yang diakibatkan oleh pembuatankebijakan mengenai kesejahteraan atau pengupahan menyadarkan pihak pimpinan organisasi lebih berhatihati dalam setiap mengambil keputusan, (4) konflik yang berhasil diatasi dan memuaskan dua belah pihak, melahirkan pribadi-pribadi yang kreatif, kritis, dan inovatif, (5) konflik juga menyadarkan semua elemen organisasi atas makna sebuah kemajemukan, bisa positif, bisa negatif.

Konflik secara negatif dapat mengakibatkan: (1) komunikasi organisasi terhambat, (2) kerjasama yang sudah dan akan terjalin antar individu dalam organisasi menjadi terhalang/terhambat, (3) aktivitas produksi dan distribusi dalam perusahaan menjadi terganggu, bekerja dalam situasi yang sedang ada konflik muncul saling mencurigai, salah paham,dan penuh intrik yang mengganggu hubungan antar individu, (5) individu yang sedang berkonflik akan

merasakan cemas, stres, apatis, dan frustasi, (6) stres yang berkepanjangan menyebabkan orang yang sedang berkonflik akan menarik diri dari pergaulan dan mangkir dari pekerjaan

Kontingensi lelucon dan diplomasi

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Revolusi Industri

Istilah Revolusi Industri merujuk pada perubahan yang terjadi pada manusia dalam melakukan proses produksinya. Dapat dikatakan

mesin mulai berperan dalam industri manusia. Pertama kali muncul di tahun 1750 an, ini lah yang biasa disebut Revolusi Industri 1.0. Revolusi Industri 1.0 berlangsung periode antara tahun 1750-1850. Revolusi Industri 1.0 yang berakhir pertengahan tahun 1800-an, diselingi oleh perlambatan dalam penemuan makro sebelum Revolusi Industri 2.0 muncul tahun 1870. Revolusi Industri 2.0 umumnya dimulai tahun 1870 hingga 1914, awal Perang Dunia I. Revolusi Industri 2.0, juga dikenal sebagai Revolusi Teknologi adalah sebuah fase pesatnya industrialisasi di akhir abad ke-19 dan awal abad ke-20. Penemuan ini memicu kemunculan pesawat telepon, mobil, pesawat terbang, dll yang mengubah wajah dunia secara signifikan. Kemunculan teknologi digital dan internet menandai dimulainya Revolusi Indusri 3.0. Proses revolusi industri ini kalau dikaji dari cara pandang sosiolog Inggris David Harvey sebagai proses pemampatan ruang dan waktu. Ruang dan waktu semakin terkompresi. Dan, ini memuncak pada revolusi tahap 3.0, yakni revolusi digital. Lalu Pada revolusi industri generasi 4.0, manusia telah menemukan pola baru ketika disruptif teknologi (disruptive technology) hadir begitu cepat dan mengancam keberadaan perusahaan-perusahaan incumbent. Lebih dari itu, pada era industri generasi 4.0 ini, ukuran besar perusahaan tidak menjadi jaminan, namun kelincahan perusahaan menjadi kunci keberhasilan meraih prestasi dengan cepat. Hal ini ditunjukkan oleh Uber yang mengancam pemain-pemain besar pada industri transportasi di seluruh dunia atau Airbnb yang mengancam pemain-pemain utama di industri jasa pariwisata. Ini membuktikan bahwa yang cepat dapat memangsa yang lambat dan bukan yang besar memangsa yang kecil atau yang lebih lemah, karena apabila sikap feodalisme harus pada tempatnya.

Remaja pada era revolusi industry 4.0 termasuk dalam kategori generasi Z. Generasi Z merupakan generasi yang tumbuh dan berkembang dengan sebuah ketergantungan yang besar pada teknologi digital dan internet. Orang-orang yang termasuk dalam Generasi Z sejak dini sudah mengenal atau mungkin bisa juga diperkenalkan dan terbiasa dengan berbagai macam dan bentuk gadget. Hal ini baik secara langsung atau tidak langsung sangat berpengaruh terhadap perkembangan perilaku dan kepribadiannya, Sudah jamak bahwa media membawa efek pada perilaku. Kecepatan internet telah membuat perilaku Gen Z sangat berbeda dengan generasi sebelumnya. Mereka suka akan sesuatu yang instan, cepat, kolaboratif, dan viral. Beda dengan orangtua mereka, ayah-ibu mereka yang bergen X atau Y adalah generasi yang merasakan kecepatan internet di tahap pertengahan dalam hidup, mereka sempat merasakan hegemoni media koran dan buku-buku fisik sehingga mereka masih bisa sabar dan mengendalikan diri. Sedangkan gen Z, mereka melek internet dari sejak lahir. Meskipun demikian , Generasi Z dapat juga tumbuh menjadi generasi yang unggul dan islami karena didikan orang tua dan guru yang baik , intensif , optimal serta ikhlas dan sabar dalam membimbing peserta didik karena sudah beda generasi.

Pelaksanaan fungsi manajemen adalah Perencanaan (planning) Di dalam planning, manajer memperhatikan masa depan atau bisa disebut juga penetapan visi misi., mengorganisasi (organizing) meliputi penugasan setiap aktifitas, membagi pekerjaan ke dalam setiap tugas yang spesifik, dan menentukan siapa yang memiliki hak untuk mengerjakan beberapa tugas., melaksanakan

(actuating) adalah melaksanakan apa yang sudah direncanakan dan sudah tetapkan suatu institusi sehingga menjadi institusi yang berintegritas , Mengatur (controlling) memastikan bahwa kinerja sesuai dengan rencana. Tugas manusia berusaha (ikhtiar), tetapi manusia harus bertawakal atau ikhlas menerima akan hasil dari usahanya tersebut. Pentingnya memikirkan apa yang terjadi dimasa depan adalah bijak. Karena tidak seorangpun yang bisa memastikan apa yang akan terjadi di kemudian hari, tetapi manusia wajib berusaha untuk mencapai cita-citanya.

Pandemi Covid-19

Sebuah coronavirus baru (CoV) bernama '2019-nCoV' atau '2019 novel coronavirus' atau 'COVID-19' oleh Organisasi Kesehatan Dunia (WHO) bertanggung jawab atas wabah pneumonia yang dimulai pada awal Desember 2019 di dekat Wuhan Kota, Provinsi Hubei, Cina [1–4]. COVID-19 adalah virus patogen. Dari analisis filogenetik yang dilakukan dengan sekuens genom lengkap yang dapat diperoleh, ditemukan kelelawar reservoir virus COVID-19, tetapi inang perantara belum terdeteksi hingga sekarang. Meskipun tiga bidang utama pekerjaan sudah berlangsung di Cina untuk memberi nasihat kepada kami kesadaran akan asal patogen dari wabah. Ini termasuk pertanyaan awal tentang kasus dengan gejala yang terjadi di dekat Wuhan selama Desember 2019, ekologis pengambilan sampel dari Pasar Grosir Makanan Laut Huanan serta pasar daerah lainnya, dan pengumpulan laporan rinci tentang titik asal dan jenis spesies satwa liar dipasarkan di pasar Huanan dan tujuan hewan-hewan tersebut setelah pasarnya telah ditutup. Virus korona sebagian besar menyebabkan infeksi saluran pencernaan dan pernafasan dan secara inheren

dikategorikan menjadi empat jenis utama: Gammacoronavirus, Deltacoronavirus, Betacoronavirus dan Alphacoronavirus. Dua tipe pertama terutama menginfeksi burung, sedangkan dua yang terakhir kebanyakan menginfeksi mamalia. Enam jenis CoV pada manusia telah diakui secara resmi. Pernapasan Akut Parah Syndrome coronavirus (SARS-CoV) yang merupakan jenis dari Betacoronavirus, HCoV229E dan HCoV-NL63, yang merupakan anggota Alphacoronavirus. Coronavirus tidak menarik perhatian global sampai pandemi SARS 2003, didahului oleh MERS 2012 dan terakhir oleh wabah COVID-19. SARS-CoV dan MERS-CoV diketahui sangat patogen dan menyebar kelelawar menjadi musang palem atau unta dromedaris dan akhirnya ke manusia. Meskipun negara tropis seperti Indonesia awalnya tidak mungkin terkena virus Covid-19, tetapi pada kenyataannya virus ini ada di Indonesia dan tempat berkumpulnya orang banyak menjadi rentan penularan dan harus waspada.

Berkenaan dengan Pandemi Covid-19, Saat pertama kali mencuat di negara China, beberapa ahli meragukannya dapat menyebar ke seluruh dunia. Sehingga persiapannya di beberapa negara tidak maksimal. Kantor-kantor, sekolah, dan banyak institusi pendidikan harus menerapkan kehidupan yang baru sesuai protokol kesehatan Covid-19. Sementara tidak semua institusi pendidikan dapat langsung beradaptasi oleh kondisi wabah ini. Selain manajemen terkait pakai masker, mencuci tangan dan menjaga jarak, pola pembelajaran juga dilaksanakan melalui online. Sehingga banyak siswa-siswi juga orang tua murid tidak langsung beradaptasi dengan kondisi ini, bahkan menolak. Dengan adanya era industri 4.0 yang salah satu cirinya adalah penggunaan media online, adanya

pandemi Covid-19 ini tentunya memaksa masyarakat harus menggunakan media internet sebagai metode pembelajaran

Digitalisasi dan kecerdasan buatan dalam proses manufaktur adalah kebutuhan industri saat ini. Industri manufaktur saat ini sedang berubah dari produksi massal menjadi produksi yang efisien. Kemajuan pesat dalam teknologi manufaktur dan aplikasi di industri membantu meningkatkan produktivitas. Istilah Industri 4.0 adalah singkatan dari revolusi industri keempat yang didefinisikan sebagai tingkat organisasi baru dan kendali atas seluruh rantai nilai siklus hidup produk yang meminimalisasi tenaga kerja manusia dan diarahkan pada kebutuhan pelanggan yang semakin individual. Industri 4.0 adalah visioner dan merupakan konsep realistis yang meliputi Internet of Things, Industrial Internet, Smart Manufacturing dan Cloud based Manufacturing. Industri 4.0 menyangkut integrasi manusia yang ketat dalam proses manufaktur sehingga memiliki peningkatan berkelanjutan dan fokus pada aktivitas yang menambah nilai dan menghindari pemborosan. Perlu diadakan penelitian lebih lanjut untuk memberikan gambaran umum tentang Industri 4.0 dan pemahaman tentang sembilan pilar Industri 4.0 dengan aplikasinya dan mengidentifikasi tantangan dan masalah yang terjadi dengan penerapan Industri 4.0 dan untuk mempelajari tren dan aliran baru yang terkait dengan Industri 4.0

Teknologi Informasi (IT) memberikan kontribusi yang cepat dan moderen dalam hal penyebaran materi informasi ke seluruh belahan dunia. IT merupakan media dan merupakan salah satu instrumen yang bersifat massal dan melibatkan

ribuan bahkan miliyaran manusia. Hanya dengan berada di depan komputer maupun handphone yang terhubung dengan internet, seseorang bisa terhubung ke dunia virtual global untuk mendapatkan ataupun menyebarkan informasi dalam satu waktu. Salah satu produk integrasi teknologi informasi ke dalam dunia pendidikan adalah e-learning atau pembelajaran elektronik. Saat ini e-learning mulai dimanfaatkan dan diaplikasikan, baik dari kalangan akedemisi, profesional, perusahaan maupun industri. Hampir di semua institusi, e-learning telah membuka pemahaman baru dalam hal proses belajar mengajar. Dengan metode pembelajaran e-learning diharapkan tujuan pembelajaran tetap dapat terlaksana, kualitas peserta didik tetap terjaga mutunya dan siswa atau siswi tetap dapat memahami mata pelajaran yang diberikan guru. Sikap sabar, tekun dan mendekatkan diri kepada Allah SWT perlu diterapkan oleh para siswa'I dan orang tua murid, agar dapat memahami kondisi pandemi Covid-19 ini dengan perubahanpolabelajar.

Proses disrupsi atau inovasi telah mengubah tatanan dunia secara pesat. Perubahan itu tidak lagi memakan waktu ribuan tahun, seperti yang dijelaskan pada teori evolusi Charles Darwin dalam On the Origin of Species. Perubahan itu hanya membutuhkan waktu yang sangat singkat. Dalam keadaan yang serba cepat itu, yang berubah tidak hanya fenomenanya saja, misalnya offline ke online, dunia nyata menjadi dunia maya, media cetak menjadi media sosial, dan lain sebagainya. Kemudian nilai-nilai, tatanan sosial, dan budaya juga ikut mengalami perubahan. Selain membawa dampak persoalan lingkungan, revolusi industri juga akan meninggalkan persoalan yang berkaitan dengan

hilangnya nilai-nilai sosial humaniora. Generasi milenial, generasi yang lahir pada sekitar tahun 1980-2000 an, sudah menunjukkan adanya gejala-gejala degradasi mental. Gaya hidup konsumerisme, kebebasan yang tanpa batas, serta hilangnya perilaku etis di media sosial adalah serangkaian contoh dari degradasi tersebut. Rhenald Kasali menyebut milenial sebagai generasi strawberry, yang digambarkan sebagai generasi yang menarik, namun rapuh karena tidak memiliki mentalitas dan nilai-nilai yang kuat. Tetapi semuanya itu dapat dihindari dengan pendekatan orang tua dan guru yang intensif, sehingga anak mempunyai prinsip dan karakter yang kuat. Kaitannya dengan manajemen pendidikan islam khususnya pesantren, Apabila prinsip pesantren dilaksanakan dengan baik kemungkinan besar santri tidak akan mendapatkan dampak disrupsi yang negatif dan tidak diinginkan.

Pembahasan Hubungan Era Industri 4.0 Dalam Pandemi Covid-19

Dengan terjadinya pandemi Covid-19 dimana diharuskan menjaga jarak dalam bersosialisasi, sehingga terjadi penggunaan media komunikasi dan pengajaran melalui online, merupakan hal yang saling berkaitan. Di satu sisi zaman kehidupan memasuki era internet, di sisi yang lain terjadi wabah Covid-19 yang menekankan karantina wilayah. Pandemi Covid-19 yang penyebabnya lebih dikenal dengan nama virus Corona adalah jenis baru dari coronavirus yang menular ke manusia. Virus ini menyerang sistem pernapasan. PAN-RB menegaskan hal ini bukan berarti pelayanan publik ditiadakan, baik pelayanan publik terkait ruang lingkup barang, jasa maupun administrasi. Hal tersebut ditekankan secara langsung oleh yang bersangkutan pada saat mengumumkan adanya surat edaran terbaru yang

menyatakan perlunya penyesuaian sistem kerja dan mengimplementasikan protokol pencegahan Covid-19. Pelayanan dapat dilakukan melalui daring (online) atau jika terdapat pelayanan manual harus mengimplementasikan mengukur suhu pengguna layanan, menyediakan tempat cuci tangan/*hand sanitizer* dan menjaga jarak serta tetap waspada terhadap potensi penularan dengan cara memakai masker dan selalu membawanya

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Lampiran 1

NHS England Board

Committees operating as a committee-in-common with NHS Improvement

udit and Risk Assurance Committee	**People, Remuneration and Nominations Committee**	**Digital Committee**	**Quality and Innovation Committee**	**COVID-19 National Incident Response Board**
		Main responsibilities		
vide an independent l objective view of rnal control, ernance and risk nagement including rview of internal and ernal audit services, ernance, risk nagement, counter d and financial orting.	• Oversee the delivery of the overall people strategy for the NHS. • Oversee the implementation of key provisions in the NHS People Plan. • Approve the framework and policy for executives for submission to DHSC. • Approve individual executive remuneration packages. • Approves employee policies. • Review employee engagement initiatives.	• Ensure effective delivery of the digital commitment of the NHS Long Term Plan. • Ensure alignment of technology initiatives and spend across the system to ensure they are focused on commitments of the NHS Long Term Plan.	• Determine whether the NHS is maintaining and improving the quality of patient care and health outcomes within the context of delivering the NHS Long Term Plan. • Oversee implementation of innovation strategies.	• Oversee the organisation's response to the COVID-19 incident and EU Exit Programme. • Oversee NHS operational delivery and performance in relation to incident recovery in light of the commitments publicly set out in the NHS Long Term Plan and the NHS People Plan.

Executive HR Group

Joint Finance Advisory Group (NHS Improvement and NHS England)	The group has no executive responsibility and has been formed to ensure that both organisations are working from a common understanding of the financial targets and financial performance of the entire health system.

Sumber: NHS Annual Report 2021

Situasi Elastisitas Harga (Posner, 2019)

$$Demand = f(P, Y, P_c, P_s, T)$$

Keterangan:

f(...) = notasi standar matematis untuk menyatakan fungsi dari...

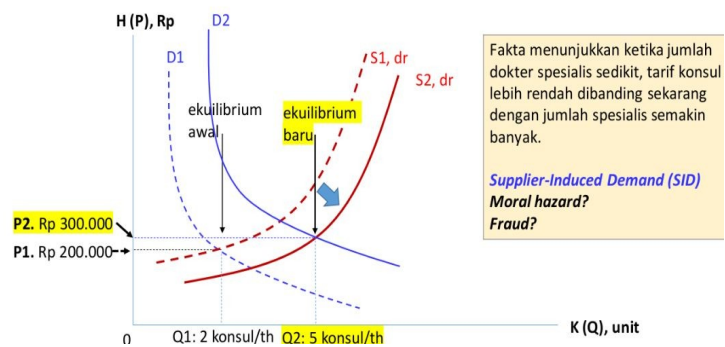
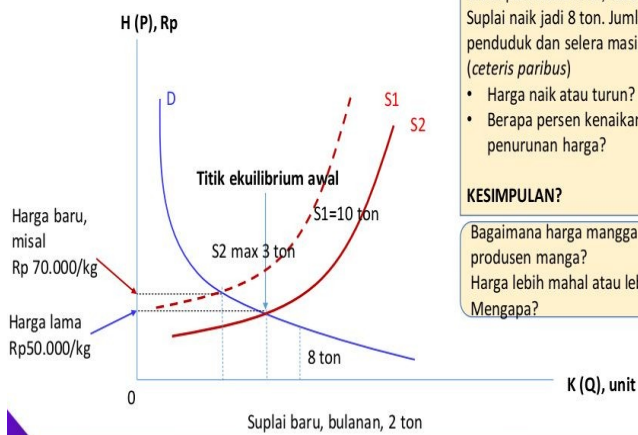
P = harga barang

Y = pendapatan

P_c = harga barang pelengkap

P_s = harga barang pengganti

T = cita rasa atau pilihan

Teori S-D Layanan Medis (Tarif (P)/Konsul)

Pasar Bersifat Dinamis

Kuis Dan Latihan Soal

1. Kondisi di mana individu makan di restaurant setelah menerima gaji bulanannya, namun di akhir

bulan makan di rumah merupakan contoh dari barang…

a. Normal

b. Mewah

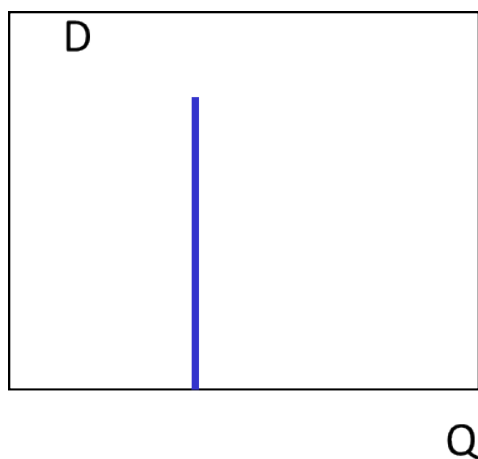
c. Inferior

d. Esensial

e. Publik

Jawaban: A

Pembahasan: naik turunnya permintaan terhadap barang yang biasanya disebabkan oleh kondisi pendapatan merupakan barang normal. Barang normal bersifat elastis, di mana restaurant akan ramai ketika di awal bulan dibandingkan dengan di akhir bulan.

2. Contoh kasus yang benar dari kurva elastisitas di bawah ini adalah…

a. Permintaan terhadap *microwave* oleh pasangan yang baru menikah

b. Permintaan barang-barang *branded* oleh ibu-ibu sosialista

c. Permintaan terhadap layanan kesehatan darurat akibat kecelakaan penumpang bus

d. Permintaan terhadap bensin dan minyak tanah

e. Permintaan makan di restaurant saat menerima gaji bulanan

Jawaban: C

Pembahasan: Kurva tersebut merupakan inelastis sempurna. Permintaan terhadap layanan kesehatan darurat di mana permintaan akan tetap walaupun pendapatan individu tinggi/rendah dan harga tinggi/rendah.

3. Dalam lima level pencegahan kesehatan masyarakat, program vaksinasi Covid-19 masuk ke dalam tahapan…

a. Promosi/*promotion*

b. Perlindungan spesifik/*specific protection*

c. Diagnosis dini/*early diagnosis*

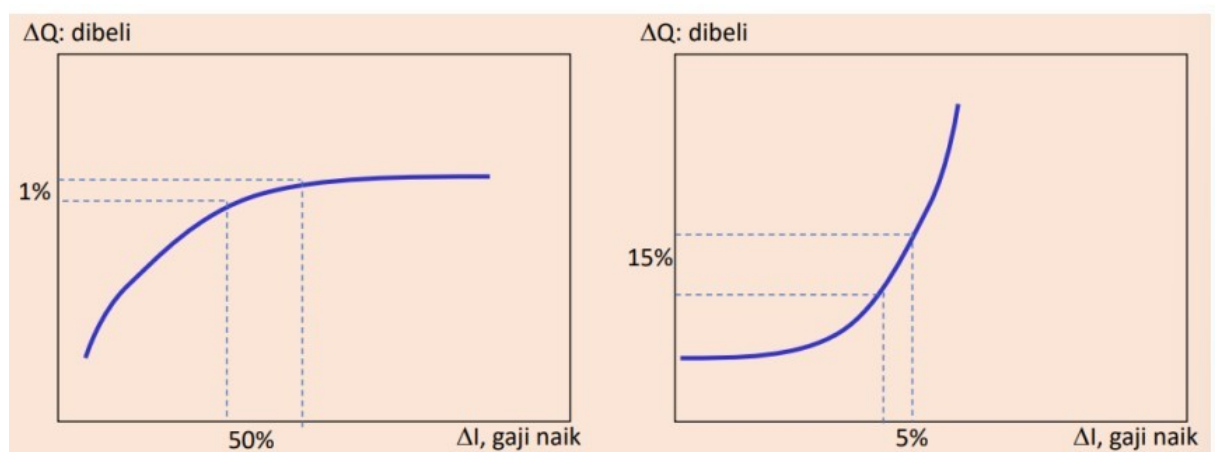
d. Pengobatan segera/*prompt treatment*

e. Reha3bilitasi/*rehabilitation*

1

Jawaban: B

Pembahasan: Walaupun masyarakat telah menerapkan protokol kesehatan yang ketat (*health promotion*), virus Covid-19 akan tetap bisa masuk sehingga dibutuhkan juga proteksi spesifik berupa vaksinasi untuk menghindari dari sakit berat jika terkena Covid-19.

4. Menurut Kurva Engel, manakah kesimpulan dari gambar di bawah ini yang sesuai…

a. A merupakan kurva demand smartphone terbaru, B merupakan kurva demand beras

b. A merupakan kurva demand layanan kosmetik dan B merupakan kurva demand layanan imunisasi

c. A merupakan kurva demand beras, B merupakan kurva demand mobil sport ferrari

d. A cocok untuk kurva demand Hp Android dan B cocok untuk kurva demand layanan puskesmas

e. Kedua kurva tidak bisa diterapkan dalam layanan kesehatan

Jawaban: C

Pembahasan: A merupakan kurva barang esensial seperti beras, B merupakan kurva demand barang mewah seperti mobil sport ferrari

5. Kebijakan besar bangsa Indonesia terhadap layanan kesehatan

sebagaimana diatur dalam “master kontrak UUD 1945” dan undang-undang tentang kesehatan, merupakan pengakuan bahwa layanan kesehatan termasuk…

a. Barang/jasa privat
b. Barang/jasa publik
c. Barang/jasa merit
d. Barang/jasa modal
e. Barang/jasa mewah

Jawaban: C

Pembahasan: barang merit adalah barang yang konsumsinya dianggap bermanfaat secara intrinsik dan penting artinya kepada masyarakat yang dapat diproduksikan oleh swasta dan dipungut bayaran, tetapi mempengaruhi kemakmuran/kepentingan rakyat, contohnya adalah pelayanan kesehatan.

Kuis Ekokes Dasar Batch 3 Sesi 4

Kuis Ekokes Dasar Batch 3 Sesi 4

1. Dalam pelayanan rumah sakit, apabila rata-rata biaya produksi layanan X lebih besar dari harga pasar, maka kebijakan jangka pendek yang paling tepat dilakukan oleh seorang manajer RS tersebut adalah…

1

a. Menaikkan jumlah pasien dengan tawaran diskon untuk layanan X
b. Membeli teknologi baru yang menjadikan layanan X lebih efisien
c. Melakukan analisis biaya marjinal layanan X
d. Menghentikan layanan X
e. Memotong honor dokter untuk layanan X

Jawaban: C

Pembahasan: Analisis biaya marjinal dilakukan untuk menghitung tambahan biaya produksi akibat peningkatan satu unit output

dibandingkan dengan penerimaan marginal akibat penambahan satu output.

2. Hal yang tidak mempengaruhi harga barang normal dalam suatu mekanisme pasar adalah...
    a. Spekulasi penjual barang
    b. Terjadi hambatan distribusi barang
    c. Meningkatnya permintaan barang
    d. Meningkatnya curah hujan
    e. Kenaikan pendapatan masyarakat 10% per tahun

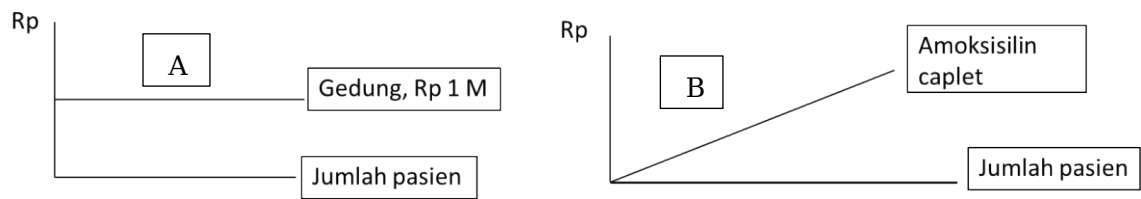
Jawaban: D

Pembahasan: Perubahan harga barang normal sangat dipengaruhi oleh jumlah permintaan atas barang tersebut. Permintaan kemudian dipengaruhi oleh pendapatan masyarakat. Spekulasi penjual juga mempengaruhi kenaikan harga barang, seperti harga tes swab di awal pandemi sangat mahal karena spekulasi penjual. Mereka tetap membeli barang tersebut walaupun mahal. Kekurangan produksi yang berakhir pada harga barang normal juga dipengaruhi oleh distribusi. Sehingga, meningkatnya curah hujan merupakan faktor yang tidak mempengaruhi harga barang normal.

3. Di bawah ini yang termasuk ke dalam *indirect cost* layanan medis kasus Covid-19 adalah...
    a. Swab test antigen
    b. Jarum suntik
    c. Jasa dokter
    d. Biaya direksi dan manajemen rumah sakit
    e. Obat bius jika pasien butuh operasi

Jawaban: D

Pembahasan: *Indirect cost* adalah biaya suatu barang/jasa yang berperan secara tidak langsung secara keseluruhan dalam suatu sistem produksi barang/jasa, contoh lain adalah biaya laundry rumah sakit, biaya makanan, biaya pemeliharaan taman rumah sakit.

4. Di bawah ini ada dua gambar yang menunjukkan bahwa…

a. Gambar A merupakan grafik biaya tetap dan gambar B merupakan grafik biaya variabel

b. Gambar A merupakan grafik biaya variabel dan Gambar B merupakan grafik biaya tetap

c. Gambar A dan Gambar B merupakan grafik biaya tetap

d. Gambar A dan Gambar B merupakan grafik biaya variabel

e. Tidak ada jawaban yang benar

Jawaban: A

Pembahasan: Gambar pertama menunjukkan grafik A biaya tetap yang tidak dipengaruhi oleh besaran output. Jika kita ingin membuka suatu klinik dan membutuhkan biaya gedung sebesar satu miliar rupiah, berapapun jumlah pasiennya, maka biaya gedung sama. Sedangkan grafik B kedua adalah biaya variabel di mana biaya obat amoksisilin bervariasi sesuai dengan jumlah pasien yang dilayani yang membutuhkan amoksisilin saja.

1 5. Sebuah klinik baru saja membeli alat rontgen seharga Rp 150 juta pada tahun 2021. Masa pakai alat tersebut adalah 5 tahun. Berapa target minimal jumlah rontgen yang harus dilakukan klinik tersebut pada tahun 2024 apabila bunga pinjaman bank sebesar 5%/tahun dan harga pasar pemeriksaan rontgen sebesar Rp 120.000/rontgen?

a. 232 rontgen

b. 289 rontgen

c. 512 rontgen

d. 720 rontgen

e. 2153 rontgen **Jawaban: B Pembahasan:**

$$BS = \frac{HB\,(1 + r)^{t}}{M}$$

$(1 + r)^{t}$ = *discount rate*

BS = Biaya Disetahunkan (*Annualized investment cost*)

HB = Harga beli barang/jasa

r =T ingkat bunga (perkiraan) tingkat bunga pinjaman bank/perkiraan bagi hasil (inflasi) t = Tahun beban biaya

M = Masa pakai normal (*life time*)

BS = 150.000.000 $(1+0.05)^{3}$: 5 = 34.728.750

Titik impas = Rp 34.728.750/120.000 = 289.4 atau 289 rontgen per tahun

Referensi :

Thabrany H, Iswanto H.(2022). *Materi Seminar Ekonomi Kesehatan Dasar Angkatan ke-3.* Kalta Bina Insani. Jakarta.

Lampiran 2

Narasi Pembelajaran : Tambahan bacaan kedua ini disertakan untuk mempermudah mahasiswa/i memahami teori tentang ekonomi kesehatan. Baik untuk digunakan sebagai referensi, maupun dalam konteks praktek kedokteran di rumah sakit maupun diluar rumah sakit. Dan masih dalam bahasa inggris agar pembaca dan pembelajar dapat mempelajari sesuai bahasa aslinya. Tetapi tetap dtuliskan sumber referensinya.

Konsep-konsep Filosofis dan Sosiologis Dalam Pelaksanaan Manajemen Strategik Pesantren Di Masa Pandemi Covid-19 Saat ini

Saat ini tahun 2022 dari pemerintah Indonesia telah mengeluarkan pernyataan bahwa pandemi Covid-19 telah menurun menjadi endemi. Tetapi status masih waspada meskipun sudah dapat dikatakan lebih aman dari sebelumnya. Dan dapat berlanjut juga ke masalah keuangan Pesantren, dimana ini masuk ke dalam masalah ekonomi kesehatan makro.

-Ekonomi kesehatan adalah Penerapan ilmu Ekonomi dalam lingkup kesehatan. Dikarenakan Terdapat aspek kesehatan yang mempengaruhi masalah ekonomi di suatu institusi. Dan Ilmu ini perlu dipelajari karena adanya faktor-faktor dalam ilmu kesehatan yang ridak dapat dipisahkan dari masalah ekonomi. Misalnya: dikarenakan terjadi Pandemi Covid-19 , seseorang mendapat kekurangan pendapatan dari pekerjaannya.

-Ekonomi kesehatan mikro adalah permasalahan pembiayaan kesehatan saat seorang pasien berobat atau mendapat penanganan di rumah sakit. Misalnya dalam permasalahan asuransi dan pembiayaan pengobatan di rumah sakit.

-Ekonomi kesehatan makro adalah permasalahan keuangan di luar rumah sakit. Misalnya karena Pandemi. Ataupun dalam tingkat nasional misalnya penyusunan anggaran kesehatan di suatu negara baik untuk tenaga kesehatan maupun masyarakat pada umumnya, dikarenakan pekerjaan berhubungan kesehatan.

Manajemen Pelayanan Kedokteran adalah suatu cabang ilmu manajemen yang menerapkan cara atau metode dalam akses pasien ke tempat praktek dokter agar dapat mendapatkan alur yang baik dari registrasi sampai dilakukannya tindakan dan pengobatan. Dalam konteks institusi pendidikan Pesantren. Contoh kasusnya adalah apabila terdapat santri yang sakit dan tidak dapat ditangani di Poskestren sehingga santri tersebut harus di rujuk ke rumah sakit dikarenakan perlu dilakukan

tindakan medis dan pengobatan di rumah sakit.

LECTURE NOTES

For All Health Science Students Introduction to Health Economics Gashaw Andargie University of Gondar In collaboration with the Ethiopia Public Health Training Initiative, The Carter Center, the Ethiopia Ministry of Health, and the Ethiopia Ministry of Education September 2008 Funded under USAID Cooperative Agreement No. 663-A-00-00-0358-00. Produced in collaboration with the Ethiopia Public Health Training Initiative, The Carter Center, the Ethiopia Ministry of Health, and the Ethiopia Ministry of Education.

iPREFACE Health economics is concerned with the alternative uses of resources in the health services sector and with the efficient utilization of economic resources such as Human resource, material and financial resources. Every health worker needs to acquaint him/ her self with the basic concepts of economics and its application to the health sector in order to manage health institutions and health delivery system efficiently. “Health economics” as a course is meant to give medical, health officer and other paramedical students basic principles regarding economics and its application to the health sector. Therefore, this material should be regarded as an introduction to health economics rather than to economics. The lecture note on “ Health Economics” is prepared in line with the set curriculum, which is currently in use in health professionals training institutes. The materials in this lecture note are complied from different books that are published by different authors and also from internet. Most books in the field emphasize only on some detailed and specific aspects of health economics. The objective of updating this lecture note is, therefore, to improve the basic ii concepts of economics and their application to the health sector and not to exhaustively present all that is important about the subject matter of health economics. Thus, the need for supplementary reference books could be of paramount importance. Concepts and the analyses presented in this document will help to serve as working material so that students and others could understand and apply basic ideas of economics to the health sector. The compiling of this material was made possible through the teaching and learning process of the course “Health Economics’ at the University of Gondar. Updating of the document should be understood as a process of making amendments of lecture materials. I do not claim that the material is an original work, hence due gratitude is extended to the previous authors of those lecture notes and books that served as sources for this instruction material.

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TABLE OF CONTENTS iv The table of contents is empty because none of the paragraph styles selected in the Document Inspector are used in the document.

1 CHAPTER ONE INTRODUCTION TO ECONOMICS Learning Objectives At the end of this chapter, the student will be able to:

1. Understand the meaning and purpose of economics
2. Know the major branches and approaches of economics 3. Be able to identify and understand the basic instruments of microeconomic analysis
4. Understand the implication of economics for business decision making and its role in changing the performance of the national economy.
5. Appreciate the importance of economics to the resource allocation, planning and management of the health sector. 1. Introduction .1 Definitions of Economics ϖ The study of how men and society end up choosing to employ scarce resources that could have alternative uses" (Samuelson) ϖ Economics is the study of how people allocate their limited resources in an attempt to satisfy their unlimited wants. Introduction to Health Economics 2 ϖ As such, economic is the study of how people make choices. ϖ It is also the study of scarcity and choice, finally helps how to use scarce or limited resource. ϖ The subject matter of economics lies on the production, distribution and consumption of economic goods. How much should be spent on education, health, books, travel, food or clothing is of course a matter of political, social or simply personal judgment as well as a question for the economist. However, as soon as people have the necessity to choose between having relatively more in the way of health services at the cost of having relatively less leisure or less to spend on education, they are "economizing". One way in which an economy operates is by permitting the price of services and of goods to reflect the costs of rendering those services and producing the goods. When this happens, we have a private enterprise economy or economic system. An alternative method of determining what shall be produced is for the state to plan or dictate industrial and other management boards the various levels or targets to be aimed at. .

1

2 Branches of economics

1.2.1 Macroeconomics versus microeconomics Introduction to Health Economics 3 A major distinction is made between macroeconomics, which studies the functioning of the economy as a whole, and microeconomics, which analyses the behavior of individual components like industries, firms and households. 1. Macroeconomics: The study of the behavior of the entire economy and concerned with the behavior of the economy as a whole or with the broad aggregate of economic life such as national output, income, the overall price level, unemployment, and foreign trade. It examines such historical issues as why did production and prices in some countries and the rest of the industrial world collapse during the great depression of the 1930s. In addition to helping people in their personal lives, economics is required to understand key national issues and to make progress in dealing with them. Economics plays two distinct roles in promoting the understanding of national economic issues. First it helps to

describe, explain and predict economic behavior-as for example when it helps us understand the causes of poverty. But for many people the pay-off from such economic knowledge comes when it is applied to a second task, that of improving economic performances. This distinction between description and prescription is central to modern economics.

Introduction to Health Economics 4 2. Microeconomics: Deals with the behavior of individual prices and quantities (Issues at individual level). Our knowledge of economics helps us to manage our personal lives, to understand society and to design better economic policies. The role of better economic understanding in guiding our individual lives will be as varied as are our personalities or physiognomies. Learning about the stock market or about interest rates may help people manage their own finances better; knowledge about price theory and antitrust policy may improve the skills of lawyer; better awareness of the determinants of cost and revenue will produce better business decisions. The doctor, the investor and the farmer all need to understand about accounting and regulation to make the highest profits from their businesses. .2 Normative versus positive economics (Fact or opinion?) When using economics we must be careful to distinguish between normative statements (or value judgments) and positive (or factual) statements. In the world today, yet health care seems to be in almost permanent crisis – there are shortages of hospital beds and patients are left to lie in corridors, while politicians argue endlessly over whether more Introduction to Health Economics 5 or less is being spent on the National Health System (NHS). Why is it that health care is such a controversial area? Why is there never enough money to give us the level of health care we want? To answer these questions we need to introduce and apply a range of economic concepts. How can we resolve the kind of dilemmas expressed in these Headlines? A statement such as "Specialist in heart-lung transplants resigns from the national health system in protest at lack of funding" is a positive statement: it can be shown to be true or false and is not dependent upon the value system of the observer. In contrast, "Health care is a basic right and should be provided free" is a normative statement. It cannot be proved true or false: our view of it depends on our value system. One of the things which make the debate over the provision of health care difficult to resolve is that positive and normative issues are very much intertwined. Sorting out fact from opinion is a first step, but it does not explain why there are not enough beds in hospitals or why people might be refused treatment. Economists believe that it is important to distinguish questions of fact from value judgments and opinions. 1. Positive economics: describes the facts and behavior in the economy. What percentages of teenagers are unemployed? How many people earn less that Birr 6,000 a Introduction to Health Economics 6 year? What will be the effect of higher cigarette taxes on the number of smokers? These are questions that can be resolved only by reference to facts; they are all the realm of positive economics. 2. Normative economics: involves ethics and value judgments. Should the government give money to poor people? Should the public sectors (government) or the private sector (business) provide extra jobs for unemployed teenagers? Should higher taxes or lower spending reduce the budget deficit? These are questions involving deeply held values or moral judgments. They can be argued about, but they can never be settled by science or by appeal to facts. There simply is no right or wrong answer to how high inflation should be, whether society should help poor people or how much the nation should spend on defense. These questions are best resolved by political decision, not by economic science. 1.3 Basic concepts of supply and demand analysis 1. Definition of Demand: Need + ability and willingness to pay for a commodity - The schedule of amounts of any product that buyers will purchase at different prices during some stated time period Introduction to Health Economics 7 - Desire refers to people's

willingness to own a good. - Demand is the amount of a good that consumers are willing and able to buy at a given price. 2. Definition Supply: the amounts of a good producer are willing and able to sell at a given price. For many people the word market conjures up a picture of a town square with lots of small stall holders selling everything from fruit and vegetables to meat and fish. For economists, the term has a much wider meaning. It is used to describe any process of exchange between buyers and sellers. Formally, a market can be defined as any set of arrangements which allows buyers and sellers to communicate and thus arrange exchange of goods, services or resources. A free market is where such exchange occurs without interference from the government. Information is a vital ingredient for any market. Both buyers and sellers need to have access to sufficient information to allow them to make rational decisions. So a market for health care must involve two groups: the buyers and the sellers, who interact to trade health care. Who would the buyers and sellers be in such a market? We all want good health and so most of us would be prepared, if necessary, to purchase medical treatment to cure an illness. This suggests that everybody is potentially a buyer (or consumer) of health care. More precisely, at any moment, a buyer would be any body who was ill or who wanted Introduction to Health Economics 8 preventative medical treatment such as vaccination or who wanted guidance about their health. The sellers would be those people who could provide medical and health care services, such as doctors, nurses, physiotherapists, dentists and high street chemists. In Ethiopia, Bone setters (Wogeshas) provide an example of a health care market which corresponds quite closely to the textbook model of a market. Bone Setters (Wogeshas) manipulate and massage bones, muscles and ligaments which have been twisted or strained in some way. Increasingly, they specialize in dealing with the kind of sprains and strains that people get from sporting activities or other injuries. The concept of supply and demand analysis helps to understand exactly how this spending of money operates in a market system. The answers to these and a thousand other questions can be found in the theory of supply and demand. This theory shows how consumer preferences determine consumer demand for commodities, while business costs underpin the supply of commodities. Finally, we will see how supply and demand are brought into balance by the movement of prices – by the price mechanism. Needs and demand Introduction to Health Economics 9 Table 1.1.An important distinction between Need and Demand Need Demand ϖ Someone's subjective idea (may be based on a formula applied objectively, but the choice to use the formula was someone's subjective idea). ϖ Money is not a factor. Objectively observable as behavior in the market. Money is a key factor. "Demand" is also called "effective demand," because it's expressed only by spending money. 3. The Demand curve The relationship between price and 1 quantity demanded allows us to define demand formally as the quantity of a good or service that buyers are willing and able to buy at every conceivable price. The demand curve (see Figure1.1.below) shows this relationship graphically. DD shows the quantity of Bone setting treatments that consumers are prepared to buy at every conceivable price. A change in price leads to a movement along the demand curve. When the price is P consumers will buy Q. If the price falls to P' then the quantity demanded will rise to Q'. A change in price has led to a movement along the demand curve. It is commonly observed that the quantity of a commodity that people will buy at any one time depends on its price. The higher the price charged for an article, the less of it people will be willing to buy; and Introduction to Health Economics 10 other things remaining equal, the lower its market price, the more units will be demanded **Relationship between price and quantity brought is called the demand schedule, or the demand curve**. Quantity demanded and the price is supposed to be inversely related. The curve slopes downward, going from northwest to southeast. This important feature is given a name: the law of downward sloping demand. It implies that when the

price of a commodity is raised (and other things held constant) buyers tend to buy less of the commodity. Similarly, when the price is lowered, other things being equal, quantity demanded increases. The rational behind the law of downward sloping demand is that consumers will generally substitute less expensive goods for other goods. Apart from the price of a given commodity there are a number other factors affecting the demand for that commodity, average levels of income, the size of the population, the prices and Introduction to Health Economics Increasing Demand 12 availability of related goods, individual tastes and other special factors. What else will influence how much Wogesha services we buy? The answer is our income, our preferences and the prices of other goods. Bone setting is a normal good so if our income rises we will buy more treatment at each price, and if it falls we will buy less. If our preferences change, we will buy more or less services at each price. If we decide we are keen on bone setting services, then we will buy more of it. If we go off the idea of this service, then the amount we buy will drop. Our demand for bone setting will also be affected by the prices of related services. An obvious example is the price of physiotherapy, which is an alternative (or substitute) treatment for many of the conditions treated by bone settlers. If the price of physiotherapy falls, then, some people are likely to switch from bone settlers to physiotherapy, so the demand for bone settlers would fall. Our demand for goods and services is also affected by changes in prices of complementary goods. These are goods and services, which tend to be bought together. For instance, if the price of eye tests rose significantly, then many people would not bother to get their eyes checked regularly. This would lead to a fall in the demand for spectacles. Whenever income, preferences or the price of a related good or service Introduction to Health Economics 13 changes, the demand curve shifts you can try out the effects of changes in the table and graphs below. Table 1.3: Price and Quantity Demanded Price of Commodity X (Birr per unit) Quantity of X demanded by Market demand Price of Commodity X (Birr per unit)

D Introduction to Health Economics 14 0 D1 Q Quantity Figure 1.2. Inwards shift in demand curve Demand curves shift inwards from DD to D1 D1 as a result of: 1. A fall in income 2. A fall in preferences 3. A fall in price of substitute 4. A rise in price of complement Price D1 D D1 0 D Quantity Figure 1.3. Out ward shift in demand curve Demand curve shifts outwards from DD to D1 D1 as a result of: 1. A rise in income 2. An increase in preferences Introduction to Health Economics 15 3. A rise in price of substitute 4. A fall in price of complement • The average income of consumers is a key determinant of demand. As people's incomes rise, they tend to buy more of almost everything. • The size of the market-measured, say, by populationclearly affects the amount demanded at each price • The price and availability of related goods will influence the demand for the commodity. A particularly important relationship exists among substitute goods-ones which tend to perform the same function, such as pens and pencils, cotton and wool or oil and natural gas. Demand for product 'A' tends to be low if the price of substitute product 'B' is also low. • In addition to these objective factors, we must add a set of subjective factors such as tastes or preferences The demand curve, as indicated in the figure 1.3.above, slopes downward to the right. The downward slope of the demand curve shows the law of demand, i.e. the quantity of commodity demanded per unit of time increases as its price falls and vice versa. The reasons behind the law of demand or the inverse relationship between price and quantity demanded are as follows: Introduction to Health Economics 16 When the price of a commodity falls, prices of all other related goods, particularly of substitutes, that remain constant become relatively constant; or the commodity whose price has fallen becomes relatively cheaper. Since consumers replace costlier goods with cheaper ones; demand for the commodity whose price has decreased, increases. This increase in demand is known as the substitute effect. As a result of a fall in

the price of a commodity, the real income of its consumers increase, or in other words, the purchasing power of consumers increase since they are required to pay less for the same quantity as they used to buy before the fall in price. This increase in real income or purchasing power encourages demand for the commodity with a reduced price. The increase in demand resulting from increased real income is known as the income effect. Marginal consumers who earlier were not in a position to consume the commodity because of its higher price, start consuming it due to the decrease in its price. With these new demands for the commodity, its market demand increases. Introduction to Health Economics 17 4. The supply curve ϖ By supply we mean the quantity of goods that supplier is willing to produce and sell. ϖ More precisely, we relate the quantity supplied of a commodity to its market price, holding other things to be equal, such as the cost of production, the price of substitute goods and the organization of the market. ϖ The supply schedule of a commodity refers to the relationship between its market price and the amount of that commodity that producers are willing to produce and sell. ¬ The supply curve slopes upward and to the right, rising from southwest to northeast. ¬ In contrast, the demand curve slopes downward. ⎫ One reason for an upward sloping supply curve is the law of diminishing returns. If society wants, more teff then more and more labor will have to be added to the same limited hill sites suitable for producing teff. Each new worker will, according to the law of diminishing returns, be adding less and less extra product; hence the price needed to coax out additional product will have to rise. By raising the price of teff society can persuade grape farmers Introduction to Health Economics 18 and wine merchants to produce and sell more wine, and the supply curve for teff therefore is upward-sloping. The sellers in this market are the Bonesetters (Wogeshas) we described earlier. We assume that these Bonesetters (Wogeshas) want to maximize their profits. What are profits and how can they be maximized? Bonesetters (Wogeshas) earn money (revenue) by selling their services e.g. by massaging away muscular strains. Out of this revenue, they need to pay for the factors they use to produce the treatment (costs) e.g. pay their receptionist, pay the rent or pay for a new ultrasound machine. Profit is the excess of revenue over costs. Price P1 At higher price P2 Wogeshas are willing to sell more treatments Introduction to Health Economics 19 0 Q1 Q11 Quantity Fig. 1.4. The supply curve The fundamental point to grasp about business' supply behavior is that firms supply commodities for profit, not for fun or charity. As a result, a competitive farmer will supply more corn when prices are higher since it is more profitable to do so, conversely, when the corn price falls between the costs of production, as it did in the mid 1980s it was global crisis, farmers plant other crops or even sell the farm or go into bankruptcy. We see that a key dominant factor lying behind supply decisions is the cost of production. When the cost of production of a particular commodity is low relative to the market price, then it will be profitable for producers to produce a great deal. When production costs are very high relative to price producers will produce little or may quit production altogether. Among the forces affecting production costs are technology and input cost. Technological advances will certainly affect costs. A second major factor affecting supply stems from the prices of production of substitutes; these goods are ones that can be readily substituted for one another in the production process. Introduction to Health Economics 20 If the price of one production substitute rises, this will decrease the supply of the other substitute. Farmers can produce wheat as well as corn; when the price of corn raises many farmers are attracted towards the production of corn and tend to produce more corn and less wheat, since the inputs that may be used for wheat production are shifted to the production of corn. A third factor affecting supply is the market organization. If a market becomes monopolized this would tend to raise the price at each level of output. 4.1 Maximizing profits Seeking to maximize profits leads each Bonesetter (Wogesha) to want to sell more care at higher

1

prices. There is a reliable and predictable positive relationship between price and quantity supplied. Formally, supply is defined as the quantity of a good or service that a population of sellers is willing and able to sell at every conceivable price. This positive relationship is shown graphically by the supply curve - SS. If the price changes there is a movement along the supply curve (see Figure 1.4 above). At price P, the Bone setting population is prepared to sell Q treatments. When the price raises to P' the Bone setting population is prepared to sell Q' treatments - this might be since more people become Bonesetters when it becomes a more profitable job. .2 Change in costs Introduction to Health Economics 21 If the level of factor costs changes, then the supply curve will shift. For example, nurses' wages could go up or the rent could fall. Let us look at the effects of these. In Figure 1.4. above, SS is the initial supply curve for treatments. Imagine that nurses' wages rise pushing up bone setting' costs. The bonesetters react by being prepared to supply fewer treatments at each price (this may be because there are fewer Bonesetters (Wogeshas). At a price such as P' Bone setters (Wogeshas) are now only prepared to sell Q" treatments rather than Q'. The supply curve shifts inwards to S'S'. Now imagine that rents fall. The profit of Wogeshas will increase for each treatment. The Bonesetters (Wogeshas) population will react by being prepared to supply more treatments at each price. See Figure 1.5. below. S1 S Price Introduction to Health Economics 22 S1 S 0 Q11 Q1 Figure 1.5. the supply curve shifts inwards to S' S'. At the price P' Bone setters are now prepared to sell Q"' treatments rather than Q'. The supply curve shifts outwards. Figure 1.5 SS is the initial supply curve for treatments. Now nurses' wages rise, pushing up bone setters' costs. Wogeshas react by being prepared to supply fewer treatments at each price. The supply curve shifts inwards to S' S'. At a price such as P' bone setters are now only prepared to sell Q'' treatments rather than Q'. S Price S11 Introduction to Health Economics 23 P1 S S11 Q1 Q111 Quantity Figure 1.6 the supply curve showing shifts outwards to S'' S''. Figure 1.6. SS is the initial supply curve for treatments. Now rents fall and Bone setters (Wogeshas) react by being prepared to supply more treatments at each price. The supply curve shifts outwards to S'' S''. At a price such as P' Bone setters are now prepared to sell Q''' treatments rather than Q'. 5. Market Equilibrium 5.1. Definition of Equilibrium: the situation when quantity supplied equals quantity demanded at a particular price. ¬ The supply and demand forces in the market place will produce an equilibrium price and equilibrium quantity, or market equilibrium. ¬ The market-equilibrium comes at that price and quantity where the supply and demand forces are in balance. Introduction to Health Economics 24 ¬ At such a price and quantity the amount that buyers wish to buy is just equal to the amount that sellers wish to sell. ¬ At the equilibrium price and quantity tend to stay the same, as long as other things remain equal, until something operates to change supply and demand. Price De Se Point of Equlibirum Pe De Se Qe Quantity Fig. 1.7. The market equilibrium We can now put the demand and supply curves together. This will give us a picture of the market for Bone setters (Wogeshas). This is shown by Figure 1.7 above. Notice that there is only one price at which the quantity of treatments people want to buy is the same as the quantity the services want to sell. This is called the equilibrium price Pe. The corresponding quantity is the equilibrium quantity - Qe. The Introduction to Health Economics 25 equilibrium is a state of rest where there is no pressure for change. At any other price either buyers or sellers are dissatisfied and act to change the quantity demanded or supplied. 5.2. Price mechanism to a Pareto efficient allocation For the consumer, the price they are willing to pay measures the benefit or utility that the consumers expect to receive from consuming the last unit. To be precise, the demand curve reflects the marginal utility (extra benefit) that consumers receive from consuming the last unit. Consumers only buy something if it is worth as much as or more than the other things that the same money could buy. So, if the

price of something is greater than the benefit they get from consuming it, they will not buy it. For the producer or seller, the price they are willing to accept measures the cost of the resources involved in the production including the supplier's own time and effort. Again to be precise, the supply curve reflects the seller's marginal costs (the cost of producing an extra unit). Thus, when a market is in equilibrium marginal benefit equals marginal cost equals price. The benefit received from the last unit consumed will exactly equal the resource cost of producing that unit. This fulfils the condition for allocative efficiency. Competing producers chasing maximum profits will always choose the least cost combination of factors to Introduction to Health Economics 26 produce a given output. Consequently, the free market will also be productively efficient. 5.3. Excess Demand If there is excess demand, consumers bid up the price. In the Figure below, at price P' consumers demand Q'. The price is low so a lot of people are willing and able to buy treatments. However, the low price means that there aren't enough osteopaths prepared to provide this amount of treatment. They are only prepared to provide Q". The excess demand (Q' – Q") causes the consumers to bid the price up to the equilibrium. Price Pe. S D Pe P1 S D Introduction to Health Economics 27 Q11 Qe Q1 Figure 1.8. Excess Demand 5.4 Excess Supply In Figure below at P" the price is too high. Consumers only demand Q"' treatments. However, the Bone setters want to sell more treatment: Q"". So there is an excess of supply (Q"" – Q"'). This will lead to Bone setters having to cut their prices (to encourage more consumers to buy treatment). As sellers, they will have to reduce their prices until they reach the equilibrium price Pe. So the free interaction of buyers and sellers in the market automatically leads to a single price at which the quantity traded 'clears' the market, i.e. the quantity supplied equals the quantity demanded. D S P11 Pe S D Q111 Qe Q1111 Quantity Introduction to Health Economics 28 Figure 1.9 Exesses Supply .4 Elasticity Elasticity provides a way of measuring how sensitive demand or supply is to factors such as a change in price. Take the relationship between price and quantity demanded. We know that if price rises, then people will buy less, but we do not know how much less. Price elasticity of demand allows us to calculate this. 1.4.1 Elasticity of demand We have seen the nature of the relationship between demand and its determinants. What is important is the extent of the relationship or the degree of responsiveness of demand to the changes in its determinants i.e. elasticity of demand. The concept of elasticity of demand plays a crucial role in business-decisions regarding maneuvering of prices with a view to making larger profits. For instance, when the cost of production is increasing the firm would like to pass the incremental cost onto the consumer by raising the price. Firms may decide to change the price even without a change in the cost of production. However, whether this action will prove beneficial or not depends on: Introduction to Health Economics 29 a. The price elasticity of demand for the product. i.e. proportionate change in its demand in response to a certain percentage change in its price and b. Price-elasticity of its substitute, since when the price of a product increases its substitutes become automatically cheaper even if their price remains unchanged. Raising prices will only be beneficial if, • Demand for a product is less elastic (i.e. percentage change in demand is less than the percentage change in its price) and • Demand for its substitute is much less elastic • Similarly, a firm finding it is not feasible to increase prices during a period of growth in consumer income would like to increase production. The additional production can be determined only through the income elasticity of demand for the product, other factors remaining the same. Introduction to Health Economics 30 Features of price elasticity of demand Features Elastic goods In elastic goods - A rise in price means - A large fall in demand - A smaller fall in demand - No of substitutes - Many - Few - Type of good - Luxury - Necessity - Price of good - Expensive - Cheap - Example - Care - Food items Introduction to Health Economics 31 υ Price elasticity of demand measures the responsiveness of demand to a given change in price. υ The

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concepts of demand elasticity used in business decision are, among others: • Price-elasticity of demand • Cross-elasticity of demand • Income-elasticity of demand ϖ Measuring demand elasticity 1. Price elasticity of demand Price elasticity of demand is generally defined as the responsiveness or sensitiveness of demand for a commodity to changes in its price. More precisely, elasticity of demand is the percentage change in demand for a commodity due to a one percent change in one of the independent variables. The price-elasticity of demand for a product is thus the percentage change in the quantity demanded that results from a one percent change in its price. The formula for price elasticity of demand (PED) is % change in quantity demanded % change in price of the good So, if the price of osteopathy rose by 10% and the quantity bought fell by 5%, then the PED would be –5%/+10% = –0.5. This tells us that demand for osteopathy is not particularly sensitive to changes in price. It is what economists call price Introduction to Health Economics 32 inelastic. Take another example, if the price of eye tests fell by 20% and the quantity of eye tests bought rose by 30% then, the value of PED would be +30%/–20% = –1.5. In this case, the demand for eye tests is price elastic, i.e. sensitive to changes in price. Notice several things about PED. First, the value of PED is always negative reflecting the inverse relationship between price and quantity demanded. Second, PED is just a number; it is not expressed in terms of any particular units. How do we know whether demand is elastic or inelastic? The rule is: Demand is price inelastic whenever the % change in price leads to a smaller % change in quantity demanded. This gives PED values between 0 and –1. Demand is price elastic whenever the % change in price leads to a larger % change in quantity demanded. This gives PED values between –1 and –infinity. Price elasticity of demand allows us to predict what will happen to spending when price changes. Take the example of the increase in the price of osteopathy used above. As the price of osteopathy rises, people will buy fewer treatments, but will they spend less? Example 1: Suppose that the price of a treatment rose from 20 Birr an hour to 22 Birr (a price increase of 10%). At 20 Birr an hour, consumers were buying 1,000 treatments per week and spending 20,000 Birr. After the price rise they bought 950 a week (a fall of 5%), but their spending had risen to 20,900 Birr (= 950 x 22 Birr). So the answer in this case is no. People Introduction to Health Economics 33 spend more on osteopathy after the price rise because the percentage increase in price is greater than the percentage fall in sales volume. So although osteopaths sell fewer treatments, the higher price of each treatment more than offsets the lost quantity of treatments sold. This gives us a general rule: If PED is inelastic; a rise in price will lead to people spending more, while a fall in price will lead to people spending less. If PED is elastic, a rise in price will lead to people spending less, while a fall in price will lead to people spending more. Price elasticity of demand allows economists to analyze and predict the effect of changes in prices on different markets. We can see an example of this by looking at the debate over cost sharing in health care. Example 2: Cost sharing is the term used to describe different forms of direct charging for health care services. Increasingly, direct charging is seen as a way of reducing demand, but also as a way of raising revenue. How effective is this policy? For instance, in Ethiopia, many people have to pay prescription charges, which they have to pay a certain amount every time they want to have a prescription dispensed. What has been the effect of this charging? Estimates made by Hughes and McGuire have indicated that demand for prescriptions is rather Introduction to Health Economics 34 price inelastic with a mean value of –0.32. This would suggest that prescription charges would be an effective way of raising revenue, but not have a great effect on the level of demand. Hughes and McGuire calculated, for instance, that the rise in prescription charges from 3.75 Birr in 1992 to 4.25Birr in 1993 would have resulted in the generation of estimated 17.3 million Birr in extra revenue, but led to a fall of 2.3 million in the

number of prescriptions dispensed. However, their research also suggests that demand for prescriptions is becoming more prices elastic as time passes. They found that PED was – 0.125 in 1969, –0.22 in 1980, –0.68 in 1985 and –0.94 in 1991. This suggests that raising prescription charges is now likely to raise less revenue, but lead to greater reductions in use of prescribed medicines than it did in the past. 2. Income elasticity The concept of elasticity can be applied to the impact of both income and changes in the prices of other goods on quantity demanded. Income elasticity of demand (YED) measures how demand reacts to changes in income. The formula for income elasticity of demand is: % change in quantity demanded % change in income If the result is positive, then the goods are normal, if it is negative then they are inferior. All the evidence suggests that health care is not only a normal good, but that it is income Introduction to Health Economics 35 elastic, i.e. rising income leads to a greater % rise in demand for health care. Obviously the formula for measuring incomeelasticity of demand is the same as the formula for measuring the price-elasticity. The only change in the formula is that the variable 'income' (y) has been substituted for the variable 'price' (p). Here, income refers to the disposable income, i.e, income net of taxes. Unlike price-elasticity of demand, which is always negative, income-elasticity of demand is always positive because of a positive relationship between income and quantity of product demanded. However, there is an exception to this rule. Income-elasticity of demand for an inferior commodity is negative because of the income substitution effect. The demand for inferior goods decreases with increases in consumers' income. When income increases consumers switch over to the consumption of superior commodities, i.e. they substitute superior goods for inferior goods. For instance, when income rises, people prefer to buy more meat and less potato. 3. Cross price elasticity of demand (XED) measures how demand reacts to changes in the price of other goods. Cross price elasticity of Demand = % change in quantity demanded of main good % change in price of other good Introduction to Health Economics 36 ϖ If cross price elasticity of demand is positive then this indicates that the goods are substitutes. ϖ If it is negative, then the goods are complements. Finally, the concept of elasticity can be applied to supply. ¬ Price elasticity of supply (PES) measures how sensitive quantity supplied is to a change in the price of the good. ¬ The formula for price elasticity of supply is: % change in quantity supplied % change in price of the good ϖ Price elasticity of supply is always positive, reflecting the positive relationship between price and quantity supplied. ϖ PES becomes more elastic over time. This reflects the time it takes to switch resources into a market. ϖ For instance, in health care the PES is likely to be fairly inelastic in the short run, but much more elastic in the long run. Even if price raise significantly, it will take time for firms to react and to produce more health care. For instance, to deliver more health care new hospitals will need to be built or existing hospital extended and extra doctors and nurses will need to be trained. All of this takes time. The concept of elasticity has helped to Introduction to Health Economics 37 make our market theory more sophisticated. However, the model still suffers from being rather static. Introduction to Health Economics 38 ♦ Features of Elasticity of Supply Features Elastic goods inelastic goods 1. A rise in price means - A larger rise in supply - A smaller raise in supply 2. The good is produced - Rapidly - Slowly 3. The time period -Months - days 4. The firm has - larger stocks - Limited stocks 5. Example - Screws - Beef Introduction to Health Economics 39 υ Price elasticity of supply (PES) measures the responsiveness of supply to a given change in price. .5 Some concepts of macroeconomics In this section, an attempt is made to understand the meaning of central macroeconomic concepts, based on which one can study how output, prices and employment are determined. 1.5.1 Objectives and instruments of macroeconomic policy Four objectives are central to evaluating macroeconomic performance – those concerning output, employment, prices and the foreign sector. a. Output: The ultimate yardstick of a

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country's economic success is its ability to generate a high level of production of economic goods and services for its population. b. Employment: Providing good jobs at a reasonable pay to those who want to work is another objective of macroeconomic policy. c. Stable price: the third macroeconomic objective is to ensure stable prices with free markets. This objective contains two parts: i. Price stability denotes that the overall price level does not rise or fall rapidly. Why do societies prefer stable prices? The reason is that price is a Introduction to Health Economics 40 common yardstick whereby economic values are measured. When the economic yardstick changes quickly during periods of rapidly changing prices, contracts and other economic agreements become distorted and the price system tends to become less valuable. ii. The second half of he objective of stable prices, maintenance of free markets, means that market forces should determine prices and quantities by supply and demand to the maximum possible extent. Free markets allow the economy to allocate resources efficiently and in a way that is responsive to individual tastes. d. Foreign economic relation: The last goal of macroeconomic policy is to promote a proper foreign economic policy. This aim has become increasingly important as the nations of the globe have become more closely tied by international trade and finance. They import and export goods and services; they borrow or lend money to foreigners; they imitate foreign technologies or sell their inventions abroad; their people travel to all parts of the world of business and pleasure. Declines in the costs of transportation and communication have made these international linkages even tighter than they were a generation ago. Introduction to Health Economics 41 Some economies today trade over half their national output. International economics involves trade between nations; countries export their products and import the products of other nations. ϖ The difference between the monetary value of exports and the money value of imports of a given country is called net exports. ϖ Nations also pay attention to their foreign exchange rates which represent the price of their own currency in terms of the currencies of other nations. ϖ When net exports turn to deficit or surplus, or when the foreign exchange rate rises or falls sharply, countries move to correct the imbalance in their foreign economic relations. Few nations succeed in meeting the above four macroeconomic objectives, but most advanced countries are continually searching for the means of attaining them more fully. 1.5.2 Macroeconomic policy instruments Introduction to Health Economics 42 A policy instrument is an economic variable under the direct or indirect control of government; changes in policy instruments affect one or more of the macroeconomic objectives. A nation has a wide variety of policy instruments that can be used to pursue its macroeconomic objectives. The major ones are: 1.Fiscal policy: This consists of government expenditures and taxation. Government expenditures influence the relative size of collective as opposed to private consumption. Taxation subtracts from income and reduces private spending; in addition, it affects investment and potential output. Fiscal policy affects total spending and thereby influences GNP and inflation 2.Monetary policy: This is operated by the central bank and sets the money supply; changes in the money supply move interest rates up or down and affect spending on items like machinery or buildings. Monetary policy has an important effect on GNP 3.Foreign economic policies: Trade policies and exchange rate management attempt to keep imports in line with exports and to stabilize foreign exchange rates. In addition, central bankers and political leaders need to coordinate their macroeconomic policies for the monetary and fiscal policies of different countries spill over to affect other countries. It used to be said, "When America sneezes, Europe Introduction to Health Economics 43 catches cold" suggesting the high degree of interdependence of European economies with the United States. 4. Income policies: A final set of macroeconomic policies are income policies, more accurately denoted as wage price policies. They are the most controversial of all

macroeconomic policies. Income policies are government actions that attempt to moderate inflation by direct steps, whether by verbal persuasion or by legislated wage and price controls. 1.5.3 Measurement of national output and income Macroeconomics is the study of the behavior of the entire economy of national output and income, the overall price level, unemployment, foreign trade and so forth. This section focuses on one of the most important concepts in all economics, the Gross National Product (GNP), which measures the total value of national output. With this measure, we can calculate the overall performance of the entire economy. Measuring national output is indispensable for macroeconomic theory and policy. It helps to tackle the central issues concerning the economic growth of a nation, the relationship between economic activity and unemployment, along with the measurement and determinants of inflation.

Introduction to Health Economics 44 1. Gross National Product (GNP) What is a Gross National Product? It is a term denoting the total money value of the goods and services produced by a nation during a given year. GNP is used for many purposes, but the most important one is that it measures the overall importance of an economy. The Gross National Product (GNP) is the most comprehensive measure of a nation's total output of goods and services. It is the sum of the monetary values of consumption, investment, government purchases of goods and services and net exports. ϖ Y = C+I +Ge+ (X- M) Y – Out put C - Consumption I – investment Ge – government purchase (X – M) - Net export With this preview, we now turn to a discussion of the elements of the national income and product accounts. We start by distinguishing between real and nominal GNP increases. Then, we turn to the different ways of measuring GNP, as well as the major components of GNP. 2. Real versus nominal GNP Introduction to Health Economics 45 In defining GNP, we measure the monetary value of goods and services using the measuring rod of market prices of oranges, apples, machines and other commodities. However, prices change over time as inflation generally sends prices upward year after year. The problem of changing prices is one of the problems economists have to solve when using money as their measurement. Clearly, we want a measure of the nation's output and income that uses a stable measurement.

Economists correct that variable nature of prices using a price index. • A price index is a weighted average of price of the thousands of items that enter into GNP. • The price index used to remove the effect of inflation ('deflate' the GNP) is called the GNP deflator. • It is defined as a weighted average of price changes of all commodities in the GNP, with each commodity given as a weight of its percentage importance in the total GNP. • The GNP deflator is used to convert nominal GNP into real GNP. • Real GNP measures the total quantity of output, while nominal GNP measures the current monetary value of output. • The ratio of nominal GNP to real GNP is the "price index of GNP" which is called the GNP deflator. Introduction to Health Economics 46 • Nominal GNP represents the total money value of goods and services produced in a given year where the values are in terms of the market prices of each year. • Real GNP corrects nominal GNP by valuing output in terms of the prices of a base year, creating a constant money measure of output. Because we define the GNP deflator as the price of GNP, we have: Real GNP = nominal GNP GNP deflator .4 Measures of national product How do we actually go about measuring GNP? GNP can be measured: ϖ As a flow of products ϖ As a sum of earnings. In this introductory discussion, we will consider GNP measurement in an economy with no government or foreign sector and with no investment-taking place. For the moment consider an economy that produces only consumer goods, which are items that are purchased by households to satisfy their wants. 1. Flow-of-product approach: Each year, the public consumes a wide variety of final goods and services; goods Introduction to Health

Economics 47 such as apples, oranges and bread; services such as health care and haircuts. We include only final goods – goods ultimately bought and used by consumers. By adding all the consumption money spent on these final goods, we arrive at this simplified economy's total GNP. Thus, in our simplified economy, one can easily calculate national product as the sum of the annual flow of final goods and services. The gross national products are defined as the total money value of the flow of final products produced by the nation. Here in our simple economy GNP includes only consumption expenditures. When we complete our analysis GNP will include all final goods and services; that is, GNP is consumption, private investment, and government spending on goods and services and net exports to the rest of the world. 2. Earnings or cost approach: This is a second way of calculating GNP. It is the total of the factors of earnings (wages, interest, rents and profits) that are the costs of producing society's final products. These represent the factor earnings of land, Labour and capital and are the costs of production of the flow of products. Statisticians can measure the annual flow of these earnings or income and in this way they will again arrive at the GNP. Introduction to Health Economics 48 The problem of "double counting" Recall that GNP is the total sum of final goods and services. A final product is one that is produced and sold for consumption or investment by consumers, governments or foreigners. GNP excludes intermediate goods, i.e. ones that are used up to produce other goods. GNP therefore, includes bread, but not wheat and cars, but not steel. For the flow-of-product, calculation of GNP excluding intermediate products poses no major complications. We simply include the bread and cars in GNP, but avoid including the wheat that went into bread or the steel and glass that went into the car. The wheat and steel are considered to be bought not by consumers and they never show up as final products in GNP. • The problem of double counting is resolved by making use of the value added approach. • Value added is the difference between a firm's sales and its purchases of materials and services from other firms. In calculating value added business costs in the form of wages, salaries interest payments and dividends are included in value added, but purchase of wheat or steel are excluded from value added. Introduction to Health Economics 49 ϖ Why are all those purchases from other firms excluded from value added to obtain GNP? ϖ Because those purchases will get properly counted in GNP from the reports of other firms. That is to avoid double counting, we take care to include in Gross National Product only final goods and services not the intermediate ones that go to make the final goods. ϖ By measuring the value added at each stage, taking care of subtract expenditures on the intermediate goods bought from other firms, the earnings approach properly avoids all double counting and records wages, interest, rent and profit exactly at one time. .5 National accounts overview Consider the table below to have a clear picture of the national income and product accounts. This table shows a summary set of accounts for both the product and incomes sides. If one knows the structure of the table and the definitions of the terms in it, one will be well on the way to understanding GNP and its family of components. Table 1.4 Summary of national accounts Product approach Earnings Approach Components of gross national product Earnings or costs as sources of national product. Consumption (C) + Wages + Introduction to Health Economics 50 Gross domestic investment (I) + Interest, rent and other property income + Government (G) + Net exports (x) Indirect taxes + Depreciation + Profits + E q u a l s : G r o s s n a t i o n a l product Equals: Gross national product Less: Depreciation Less: Depreciation Equals: Net national product Equals: Net national product The table above shows the major components of the two sides of the national accounts. The left side shows the components of the product approach; the symbols C, I, G and X are often used to represent these four items of GNP. The right side shows the components of the earnings or cost approach. Each approach will ultimately add

up to exactly the same GNP and NNP. Besides GNP, NNP is another measure of national income. The concept of NNP is closely associated with that of GNP. The GNP as defined above includes the value of all final goods and services including also that of total productive assets (produced during the reference period) which is used to replace the capital worn out in the process of creating GNP. Briefly speaking, in the process of production of goods and services a part of the total stock of capital is used up. The Introduction to Health Economics 51 term used to denote the worn out or used up capital is known as depreciation. Thus, NNP is defined as GNP less depreciation or NNP = GNP – Depreciation The NNP gives the measure of net output available for use by society (including consumers, producers and the government). The NNP is the real measure of the national income. Thus, NNP = NNI (net national income). In other words, NNP is the same as the national income at factor cost (costs for Labour, capital and other inputs). It should be noted that NNP is measured at market prices including indirect taxes. Indirect taxes, however, are not elements of actual costs of production and hence do not represent the creation of value. Therefore, to obtain real national income indirect taxes are deduced from the NNP. Thus, NNP-indirect taxes = National Income. Relationship between national income concepts We now present the relationship between the two sets of national income concepts based on product-flows and earnings-flows: GNP=NNP + Depreciation NNI = NNP – Indirect taxes GNP = NNI + Depreciation + Indirect taxes and GDP = GNP – net income from abroad Introduction to Health Economics 52 Investment and capital formation So far, we have talked of people wanting to consume bread, oranges and haircuts. In real life, however, nations devote part of their output to production of new capital goods for investment. Investment involves the sacrifice of current consumption to increase future consumption. Instead of eating more bread now, people choose to build new ovens to make it possible to produce bread for future consumption. Investment (capital formation) consists of the additions to the nation’s stock of buildings, equipment and inventories. It is the new houses factories, trucks, and inventories produced in a year. To economists investment always means real capital formationadding goods to the stock of inventories or production of new factories, houses, or tools. Treatment of government Somehow, GNP must take into account the total product a nation collectively consumes or invests; we must include public goods along with private goods. To do this, we simply add all government expenditures on goods and services to the flow of consumption, investment and net exports. These government expenditures include costs of reads and missiles, spending on the services of teachers and judges, wages of Introduction to Health Economics 53 soldiers and weather forecasters. In short, all the government payroll expenditures on its employees plus the goods (typewrites, roads and airplanes) it buys from private industry are included in this third great category of flow of products called ‘government expenditure on goods and services’. Exclusion of transfer payment: GNP includes only government spending on goods and services and excludes spending on transfer payments. Payments to individuals that are not made in exchange for goods or services supplied these governments such as unemployment insurance, veteran’s benefits, old age or disability payments, income support to the blind and similar items. They are intended to meet some form of need. Since transfers are not for purchases of a current commodity or service, they are omitted from GNP. Thus, if one receives a payment from a government agency it would be a factor payment and be included in GNP if one receives welfare payments because one is poor, that payment is not for any goods or service, but is a transfer payment excluded from GNP. Finally, we should not confuse the way the national accounts measure government spending on goods and services (G) with the official government budget. When the treasury measures its expenditures, these include expenditures on goods and services (G) plus transfers. Introduction to Health Economics 54 υ GDP: Is similar to GNP except that it count all income produced

within the borders of a country, including income earned by resident foreigners, but excludes income earned by citizens of the country who are residents a broad. Review Questions 1. Describe the basic problems of economics and show the relevance of economics as a field of study. 2. Outline the different branches and approaches of economics. Discuss the practical purpose of economics. 3. Define and discuss the meanings of the following terms and phrases: a. Demand b. Quantity demanded c. The demand schedule d. The demand curve e. Elasticity 4. By making use of the demand and supply curves show the market equilibrium. 5. A given study has shown that the quantity demanded for Dashen Beer in Bahirdar Town has increased by 10%

Introduction to Health Economics 55 during the same period the income of the population of the town is assumed to have increased by 5%; based on the information provided: - Calculate the income elasticity of demand - Discuss the business policy implications of the result. 6. Write the objectives and instruments of macroeconomic policy. 7. Why is double counting a problem in the measurement of national output and what is the proposed solution thereto? Introduction to Health Economics 56 Bibliography 1. Culyer, A.J Need and the National Health Service; Economic social choice, Oxford 1976. 2. Culyer, A.J, et al. Economic Aspects of Health Services. London 1978. 3. Drummond, M.F. et al. Methods for the Economic evaluation of health care programmes. Oxford 1993. 4. Dwivedi, D.N. Managerial Economics, New Delhi, 1980. 5. Green, A. An Introduction to health planning in Developing countries. Oxford 1996. 6. IMF. Finance and Development; A quarterly publication of the International Monetary Fund and the Wrold Bank Washington. DC. Sept. 1993. 7. Jacoba, P. et al. Methods for the Economics of health and Medical care. Gaitheraburg, Maryland 1997. 8. Samuelson, P.A et al Economics McGraw-will 2006. 9. Sorkin, A.L. Health Economics, London 1975 10. World Bank. World Development Report 1993. Introduction to Health Economics 57 11. World Health Organization. The impact of Development policies on health, Geneva 1990 12. World Health Organization, Evaluation of recent changes in the financing of Health services. 13. WHO Technical Report Series. Geneva 1993. 14. Roger Leproy Miller, The Economic of Today the macro view 1999 - 2000 Edition. 15. DN Dwivedi, the principles of Economics, Vikas publishing house pvt ltd, Second editions, 2005 16. Ayele Kuris, Microeconomics part I, Second Edition, 2006.

Introduction to Health Economics 58 CHAPTER TWO MAIN FEATURES OF THE HEALTH CARE SERVICE AND ITS RELATION WITH ECONOMIC DEVELOPMENT Learning Objectives At the end of this chapter, the student is expected 1. To understand health as one of the social sectors with economic implication. 2. To understand the specific nature of the health care service in implementing economic principles and techniques. 3. To be able to know the implications of economic development to the health care services. 4. To understand the effect of some economic factors on health status of society. 5. To identify the ways through which improvement of the health system can create conducive conditions for economic development and vice versa. Introduction to Health Economics 59 2.1 Health economics: “Health economics” can be defined as the application of Economic theories, tools and concepts of economics as a discipline to the topics of health and health care. Since health economics is concerned with issues related to the allocation of scarce resources to improve health, this includes both resource allocation within the economy to the health sector and within the health care system to different activities and individuals. In Ethiopia, the need for health care is increasing due to rapid population growth and changes in disease pattern. Related with this, health care costs are expected to be rapidly increasing. Apart from explosion of costs, inequity, misallocation and

inefficiency are believed to be serious challenges to the health care system. These problems put a considerable strain on our limited health care resources. Health economics is now a term commonly used in public policy documents, in the medical and scientific literature, and in the lay press. There are also very visible signs of change in the health care market. Attention is shifting from the “passive” funding and administration of systems, in which physicians identify and provide appropriate care, to concerns about the resource costs of care and the health outcomes achieved from providing care. Introduction to Health Economics 60 “What a buyer wants to know is the difference between this state of well-being with and without the commodity being considered for ordinary goods. The buyer has little difficulty in evaluating the counter-factual-that is what the situation will be if the good is not obtained not so for the bulk of health care… the noteworthy point is not simply that it is difficult for the consumer to judge quality before the purchase… but that it is difficult even after…” So, why is this economic perspective useful in the context of health care? ♣ Health economics examines the problem of scarcity as it arises with respect to health and health care. ♣ It examines how we as individuals and societies confront the fact that while the resources available to us are limited, the alternative uses for these resources are unlimited. Thus, health economists are interested in some very important questions. How is health produced? What role does health care play in its production? What is the value of health? How do we go about measuring health status? What influences demand for health and health care? What influences the supply of health care? How can equilibrium between demand and supply be achieved? The discipline of health economic is the study of these questions and the answers to them that individuals and societies have put forward. Introduction to Health Economics 61 The principles of health economics consider supply and demand issues and how the two might interact given that the standard market solution generally fails due to problems such as: ϖ Adverse selection, ϖ Moral hazard, ϖ Asymmetric information ϖ Supplier induced demand. ¬ Adverse selections: A situation often resulting from asymmetric information in which individuals are able to purchase insurance at the rates that are below actuarially fair rates plus loading costs. An event in healthcare whereby one party decides not to reveal the full extent of their risk profile to the other party (i.e. insurance model). ¬ Moral hazard: the possibility of consumers or providers exploiting a benefit system unduly to the disadvantages of other consumers, providers or the financing community as a whole. ¬ An insurance term that represents the disincentives created by insurance for individual to take measures that would reduce the amount of care demanded. In the health services literature, it is more commonly used to express the additional quantity of health care demanded, resulting from a decrease in the net price of care attributable to insurance.
1 Introduction to Health Economics 62 ¬ Arises where the attitudes and behavior of a person or organization change once they are covered for potential costs or losses (e.g. healthcare consumption may be higher when insured.) ¬ Asymmetric information: Situations in which the parties on the opposite sides of transaction have differing amounts of relevant information. Doctors have more knowledge and information about medicine than patients /consumers, the individual may not be the best judge of his/her own interests, the doctor acts as an agent of the patients demand. 2.2 General features of the health Care There are different understandings of health – each with different implications for the roles of government. It is important to recognize, first, the difference between health and ‘health care’. The term health refers to a state either of an individual or of a community. A number of factors including ‘health care’ may influence this state of health. However, other factors that affect health are poverty, level of education, food intake, access to clean water and sanitary and housing conditions. The narrowest concept of health sees it as a measure of the state of the physical body organs. An individual is unhealthy if there is a malfunctioning of part of the body.

A broader, but Introduction to Health Economics 63 related, definition sees health just in terms of the mechanics of the different bodily organs, but in the ability of the body as a whole to function. In contrast, the WHO definition of health as "a state of physical, mental and social well-being and not merely the absence of disease or infirmity" indicates a clear shift away from earlier narrow organic or functionally-based definitions of health to a more holistic view, it sees the health of an individual or community as being concerned not only with physical (and mental) status, but also with social and economic relationships. How one views health will affect the type of intervention and planning that is possible. The narrowest definitions are closely associated with a medical model of health in which the role of health services is seen as paramount in restoring the functioning of the unhealthy body. Wider primary health care concepts suggest that broader interventions, including community empowerment and anti-poverty measures, are necessary to promote health. We turn now to different perspectives on the importance of health and on to possible roles of the state in promoting it. Three perspectives can be distinguished. Introduction to Health Economics 64 1. Perspectives of Health a) Health as a right Health is viewed by some as a right analogous to justice or political freedom. Indeed, the WHO constitution states that '... the enjoyment of the highest attainable standard of health is one of the fundamental rights of every human being without distinction of race, religion, political belief, economic or social condition'. Although it is difficult to believe that equal health status is attainable in the same way that equal political freedom may be, health is seen as so fundamental that constraints to its full attainment must be minimized. In part, this involves ensuring access to health care. The government is seen as having a responsibility to ensure this, comparable with its role in ensuring equal justice. According to such a view, a government will be particularly concerned with issues of equity in health and health care. b) Health as consumption good For others, health is seen as an important individual objective that is not comparable with justice, but rather with material aspects of life. Such a view often refers to health as consumption good. The government here has no special responsibilities in the promotion of health, but leaves decisions as to its comparative importance to individual consumers. The role of the state under such a view might be limited to ensuring that the health care provided is of an adequate Introduction to Health Economics 65 quality (such as ensuring professional standards in the same way that it would monitor the quality of any good or service, such as food). c) Health as an investment A third view of health is that it is important, but largely it affects the productive ability of the workforce. Illness may affect overall production, either through absenteeism or by lowering productivity through its debilitating effects. 2.3 Distinctive characteristics of the health Care services from other commodities 17. Case against a free market: ϖ Market failure ϖ Problems of Risk and uncertainty ϖ Unequal information – Doctor's agents ϖ Consumers as satisfaction maximisers ϖ Imperfect competition ϖ Externalities ϖ Equity and health care Why not leave health care to the market? Most people believe that you cannot buy and sell health care like other goods and services. They believe that health care is different. This is what is sometimes called a "common-sense" Introduction to Health Economics 66 approach to the issue. Look at the first activity in Questions and Activities to develop this idea further. Economists approach the same question rather differently. They analyze the question of health care and markets from a theoretical perspective. The main theory they use is called market failure. In this unit, we will look at the issue of market failure in general and then look in detail at the problems that health care markets face. After that, we will look at the issue of equity again. 1.1 Market failure Definition of Market: For many people the word market conjures up a picture of a town square with lots of small stallholders selling everything from fruit and vegetables to meat and fish. For

economists, the term has a much wider meaning. ϖ It is used to describe any process of exchange between buyers and sellers. ϖ Formally, a market can be defined as any set of arrangements that allows buyers and sellers to communicate and thus arrange exchange of goods, services or resources. ϖ A free market is where such exchange occurs without interference from the government. Introduction to Health Economics 67 ϖ Information is a vital ingredient for any market. Both buyers and sellers need to have access to sufficient information to allow them to make rational decisions. In theory, markets produce the goods and services we want in the right quantities and at the lowest possible cost. This is why markets are so powerful. Nevertheless, in the real world markets do not always work in the way theory predicts. It is possible for a free market to produce a Pareto inefficient result - i.e. the market fails. 1. An information system A market is an information system. We get the right goods at the lowest possible cost since the market is able to transmit all the information about benefits and costs between producers and consumers. If this information is less than perfect, then the market will fail. Think about buying a CD. You know what a CD is, and you will have a good idea of the kind of music on the disc. Therefore, you are able to relate your benefit to the price of the CD. If we look at the market for CDs, people will go on buying CDs until the extra satisfaction from the last CD is exactly equivalent to the price of the CD. We have reached the situation where we as a society are consuming the ‘right’ quantity of CDs in the sense that we are gaining the maximum possible satisfaction from CDs given their price. However, health care is rather different from CDs. We face very acute Introduction to Health Economics 68 information problems, which make rational purchasing decisions difficult if not impossible. For instance, most people do not know the best way to treat a stomach ulcer so they would find it difficult to buy such treatment. This analysis also assumes that the only people receiving benefit or satisfaction from the CDs are the people buying them. In other words, the price of a CD accurately conveys the level of satisfaction received. This ignores the possibility of externalities or ‘spillovers’. Think about someone hearing your CD and enjoying it - they are also receiving satisfaction from the disc, but the market is unable to provide any information about the benefits they are receiving unless they specifically share the cost of buying the CD. Whenever externalities occur, the market fails. Many economists believe that there are strong externality effects related to health care. For example caring for a sick person can impose financial costs on that person’s family. Finally, the medical profession often does little to inform the consumer concerning the results of alternative courses of treatment. 2. Perfect competition An efficient free market requires producers to be operating under conditions of perfect competition. This requires a stringent set of conditions - perfect information, many buyers Introduction to Health Economics
1 69 and sellers, a uniform product and freedom of entry and exit - which ensure that firms are price takers, producing for the lowest possible cost in the long run and only earning normal profits. If producers do not operate in this way and, in particular, if they have a significant power to influence price or the total quantity being produced, then the market will fail. Doctors and other suppliers of health care often have this power. 1.2. Problems of Risk and uncertainty If we are going to buy health care in a free market, then we have to have enough money to pay for it. Nevertheless, health care is expensive and we cannot predict when we are going to be ill. What makes this worse is that postponing buying health care is often risky. So, we face the problems of risk and uncertainty. The market response to this problem is to develop an insurance market to remove the uncertainty and risk from health care spending. We pay an agreed amount of money per year whether we need health care or not. Then, when we need care, the insurer pays the bills, however large they are. So, a free market in health care requires an effective health care insurance market. Unfortunately, the health care insurance market itself is often not efficient. Moral hazard and adverse selection

both cause significant market failure. 1. Moral hazard Introduction to Health Economics 70 Having insurance can change the way in which we act. Imagine you are in a cinema and the film is just about to start. Then you remember that you have left your bicycle unlocked. What do you do? If you have comprehensive, insurance this will compensate you against any loss you are much more likely to carry on watching the film. Your attitudes have been changed by the fact that you have got insurance - this is what economists call moral hazard. Moral hazard can affect any insurance market, but is a particularly serious problem for health care insurance. Consumers who are insured have an incentive to over-consume health care - to demand operations and treatments, which they would not choose if they were directly paying for them. They may also not bother to follow a healthy lifestyle or to get preventative checkups. As a result, when they do fall ill, the cost of treatment is higher than it would otherwise have been. Doctors too are affected by moral hazard. They know that the costs of treatment are covered by insurance so the temptation is to over-treat and over-prescribe medicines for their patients. Moral hazard thus leads to an inefficiently large quantity of resources being allocated to health care. 2. Adverse selection A company selling health care insurance has to estimate the level of risk accurately. This is difficult because they will not have complete information on the risk status of the person Introduction to Health Economics 71 they are insuring. One solution is to set the premium at an average risk level. But this makes the policy expensive for low risk customers who therefore may choose not to buy the insurance. The process whereby the best risks select themselves out of the insured group is called adverse selection. Insurance companies know that this is likely to happen so they offer different premiums according to the level of risk and the person's experience of ill health. This is why most companies will offer non-smokers a lower premium than smokers. Offering low insurance premiums to low risk groups, often called 'cream skimming' or 'cherry picking', means high premiums have to be charged to high risk groups such as the elderly or chronically sick. Therefore, in a free market, health care insurance is likely to be too expensive for many people, and especially for those most in need of health care. .3 Unequal information Moral hazard and adverse selection help to explain why a free market in health insurance is unlikely to be efficient. However, health care markets face even more fundamental information problems. We are now going to examine the problems caused by unequal information and the consequent role of doctors as agents for patients. Introduction to Health Economics 72 1. Rational choices When you go into a shop to buy a CD, you have enough information to make a rational choice and you do not need the shop assistant to tell you what you should buy. Going to the doctor is very different. You know that you perhaps do not feel well and that you have particular symptoms, but most people are not able to diagnose their complaint and they want the doctor to do that. What is more, you then rely upon the doctor to specify the treatment – if the doctor says you need an expensive operation then you buy it. In the health care market, information is not equally shared between buyers and sellers, instead, the seller, the doctor, has far more information than the buyer does, the patient does. This asymmetry of information undermines the separation of buyers and sellers. This situation is not unique to health care, but there are a number of factors, which make this information asymmetry particularly acute there. 2. Information problems Most medical information is technically complex and so not easily understood by a layman and this is made worse by the fact that many illnesses do not repeat themselves, so that the cost of gaining the information is very high. You could argue that the only way a patient could become fully informed would be by training to be a doctor! The costs of a mistaken choice are much greater and less reversible than in other cases in the worst situation if you make the wrong decision you will be Introduction to Health Economics 73 dead. It is also often difficult to postpone treatment and so virtually

impossible to shop around, and anyway how do you judge between different doctors' opinions? 3. Doctors as agents The asymmetry of information makes the relationship between patients and doctors rather different from the usual relationship between buyers and sellers. We rely upon our doctor to act in our best interests, to act as our agent. This means we are expecting our doctor to divide herself in half - on the one hand to act in our interests as the buyer of health care for us, but on the other to act in her own interests as the seller of health care. In a free market situation where the doctor is primarily motivated by the profit motive, the possibility exists for doctors to exploit patients by advising more treatment to be purchased than is necessary - supplier induced demand. Traditionally, doctors' behaviour has been controlled by a professional code and a system of licensure. In other words, people can only work as doctors provided they are licensed and this in turn depends upon their acceptance of a code, which makes the obligations of being an agent explicit, or as Kenneth Arrow put it, "The control that is exercised ordinarily by informed buyers is replaced by internalized values" 4. Supplier Induced Demand (SID) Introduction to Health Economics 74 The change in demand associated with the discretionary influence of providers, especially physicians, over their patients. Demand that is provided for the self interests of providers rather than solely for patients interests. Example: If doctors behaved like some financial advisers or computer salespersons in the past and maximized profits without any limit from a professional code. 1.4 Consumers as satisfaction maximisers Are consumers rational satisfaction maximisers? Market theory assumes that consumers know what is best for themselves - that is they can make choices, which will maximize their total satisfaction. If this assumption is wrong, then markets will not automatically produce efficient results. Economists call the satisfaction that consumers get from consuming a good or service utility. So, the extra satisfaction from consuming a bit more is called marginal utility, while the total satisfaction gained from consuming the whole amount is referred to as total utility. The satisfaction gained simply depends on the quantity and mix of goods and services chosen. The theory assumes that consumers get more satisfaction from more goods and services, but that the increase in satisfaction from consuming another unit - the marginal utility - diminishes as consumption rises. 1. Maximizing utility Introduction to Health Economics 75 How do consumers go about choosing the mix of goods and services, which give them the maximum total utility? They start by thinking about what they like (their tastes/preferences) and then look at how much money they have to spend (their income) and the prices of the different goods and services. They then choose the combination, which gives them the highest utility for the money spent. We introduced this idea earlier when we talked about a consumer buying CDs. We argued, "You are able to relate your benefit to the price of the CD. If we look at the market for CDs, people will go on buying CDs until the extra satisfaction from the last CD is exactly equivalent to the price of the CD. We have reached the situation where we as a society are consuming the 'right' quantity of CDs in the sense that we are gaining the maximum possible satisfaction from CDs given their price." "By choosing a particular bundle of goods, people demonstrate that they prefer it to all others; consequently, it is best for them. In addition, if all people are in their best position, then society - which is simply the aggregation of all people - is in its best position. Therefore, allowing people to choose in the marketplace results in the best of all possible economic worlds" - Thomas Rice. 2. Another view of consumers However, Thomas Rice in the Economics of Health Reconsidered suggests a range of reasons why this view of Introduction to Health Economics 76 consumer behaviour could be mistaken. Here are three of them: 1. The idea that consumer utility just depends on the bundle of goods and services consumed. If this were true then people in rich developed economies ought to be appreciably happier than people in poor developing economies. However, research by Easterlin in 1974 showed that "average levels of happiness are fairly

constant across countries; people in poor countries and wealthy countries claim to be equally happy" – Rice. Easterlin's research suggested that utility depended on your relative consumption - so rich people were happier than poor people in all societies. This means that if you consume more that could reduce my utility because I am now relatively worse off. 2. Traditional theory ignores the issue of how tastes are determined. Evidence from social psychology suggests that tastes are determined by people's past and present environments. So for instance, if you are in a peer group which smokes then you are likely to develop a 'taste' for smoking, which will remain, even after you have left the peer group. If this is true, then it is not clear that satisfying tastes will actually make people better off. In fact, "If one believes that tastes are determined in such a way, then it becomes clear that a society might be better off pursuing some goods Introduction to Health Economics 77 and services that are not demanded most strongly by the public. This is because people might not know what alternatives are available that will make them better off". 3. Are consumers rational? What do economists mean by the concept of rationality? In a narrow sense, they mean that people will behave consistently - so if they prefer A to B and B to C then, they will prefer A to C. More widely, they mean that people will behave in a reasonable manner. If consumers are not rational in this sense, then they will not necessarily make decisions, which maximize their welfare. Social psychology suggests that people are often not rational in this sense - instead they exhibit what is called cognitive dissonance. In other words, they simultaneously hold two ideas that are psychologically inconsistent and use various forms of selfjustification and rationalization to overcome the tension. Take the issue of saving for old age. It is rational to do this, but often people do not do it. Why not? Well the act of saving forces you to face up to the reality of ageing. If you are scared of getting old then, you are likely to refuse to contemplate this and so choose not to save. Cognitive dissonance suggests that people will often not make decisions, which maximize their utility. Rice argues that the issues raised above are particularly important in health care markets. Consumers are unlikely to Introduction to Health Economics 78 be in a position to appreciate the full range of possibilities available to them and so need expert help to guide them. This is particularly true as many situations affecting health are likely to produce cognitive dissonance. If utility is relative, then, this suggests that society would be better off with some form of universal provision rather than one based on individual health care purchases. 1.5 Imperfect competition The free market models predict large numbers of buyers and sellers - all of whom have no power individually to influence the market price. However, a significant proportion of health care is delivered by hospitals and these hospitals can often exercise monopoly power within the health care market in the local area. 1. Monopolies Why should hospitals be able to act like monopolies? The answer is that hospitals have an incentive to grow in size and in the range of services provided. This leads to the emergence of one large hospital in an area rather than a large number of small hospitals. The incentive to grow is falling unit costs - what economists call internal economies of scale and economies of scope. 2. Economies of scale Introduction to Health Economics 79 Why should the average cost of providing treatment fall as a Hospital becomes larger? There are a number of reasons. 1. A large institution is able to make more use of specialization. This can involve both people and capital. A large hospital is able to develop specialist medical units employing both highly skilled surgeons and specialist capital equipment. Such a hospital is also able to employ specialized managers and ancillary staff, which will allow it to operate more efficiently. 2. A large institution is able to achieve purchasing economies of scale through bulk buying. 3. A large hospital prevents wasteful duplication of facilities. There will only be a limited number of patients with a particular condition needing particular skills and equipment in any one area. Concentrating the

treatment in one place allows the most efficient use of resources. 3. Economies of scope In many cases, it costs less to provide a range of services in a single hospital rather than have several hospitals each just producing one or two services. For example, emergency surgery and treatment of heart attacks are more cost effectively provided in a single hospital rather than two separate ones. 4. Price maker Introduction to Health Economics 80 In this situation, the hospital as supplier of health care services has considerable power to bargain over price. Instead of being a price taker, it is a price maker. In this situation, a free market does not lead automatically to a Pareto efficient outcome. In particular, if the hospital is profit maximising then it will set price above marginal costs giving an allocative inefficient outcome. In addition, it is likely that the hospital will be productively inefficient, since it lacks the incentive to reduce costs, which would be provided by competition. 1.6 Externalities The economist defines external effects as involving positive and negative results for others that are the consequences of one’s own actions. Externalities or spillover effects provide another source of market failure. Again the problem is related to information. This time the market price does not accurately contain all the information about the benefits and costs of the market transaction. Earlier we outlined how this might occur when a consumer bought a CD. Now we are interested in how this might operate in a health care market. Example: Suppose vaccination against infectious diseases were bought and sold through a free market. You are thinking about the benefits to you of not catching whooping cough – the price you Introduction to Health Economics 81 are prepared to pay for vaccination will depend on your personal, private valuation of the benefits you receive. Going from a single consumer to the market, we can analyse the interaction of supply and demand for vaccinations using a diagram. In the Figure below, DD shows the market demand for vaccinations. The amount of vaccination that private individuals will be prepared to buy at each price will depend upon their estimate of their personal benefit from being protected against whooping cough. In formal terms, this means that DD represents the marginal private benefit (MPB) that consumers receive. The market supply of vaccinations is shown by SS. The free market equilibrium is at price P' giving Q' vaccinations. However, when you are vaccinated against whooping cough you are not the only person to benefit. Other people also gain since they are now protected against catching whooping cough from you. This extra or externality benefit is missed by the free market. We can show the effect of this on the diagram. MSB represents the marginal social benefit from vaccination, which is that all the benefits received by society. MSB is made up of the entire private benefits consumers receive (MPB) plus the additional externality benefits. The Pareto efficient equilibrium is E'' which corresponds to Q'' vaccinations. A free market will thus underprovide vaccinations and this in
1 turn will impose a cost upon Introduction to Health Economics 82 society. This cost is shown in the diagram by the shaded area E'FE'', which equals the excess of MSB over the cost of producing the further Q'' – Q' vaccinations. Price of D F S Vaccinations Cost E11 P1 E1 MSB S D D =MPB Q1 Q11 Quantity of vaccinations Figure 2.1 “Selfish” versus “caring” externalities Some economists refer to this type of externality as a ‘selfish’ externality to distinguish it from a ‘caring’ externality. A ‘caring’ externality occurs when individuals receive benefit from knowing that other people are receiving medical treatment. Knowing that someone is in pain simply because they cannot afford medical treatment makes many people upset. In other words, the poor sick person’s pain and lack of treatment causes disutility for other people in society. Introduction to Health Economics 83 This helps to explain also why some people are prepared to pay higher taxes to fund health care for all. Again, a market demand curve reflecting each individual’s wish to buy care for them is unable to express this willingness to pay for external benefits. So, a free market will further under-provide health care. 1.7 Equity and health care 1. Equity is more than efficiency Efficiency is not

everything. We are also concerned with what is fair. If we had a market distribution of health care, then only those who could afford to pay would be able to purchase it. Most people regard that as unacceptable. This is a major reason why most societies regard health care as different from other commodities. As Donaldson and Gerard put it: “Within most societies there exists, in some form or another, a concern that health care resources and benefits should be distributed in some fair or just way”. A concern about equity was one of the main motivating forces behind the creation of the National Health Service (NHS) in the developed Nations. William Beveridge, the architect of the welfare state, argued for a health service which would provide treatment “to every citizen without exception, without remuneration limit and without an economic barrier at any point to delay recourse to it”. Equity has remained a major goal within the developed nation’s health system. Introduction to Health Economics 84 2.4 Demand for health services As indicated above, most observers agree that consumers demand are affected by various factors such as more ignorant, taste and uncertain in their role as consumers of health services than as purchasers of most other commodities. They can not assess the quality and character of the health services they consume and are generally unaware of the variety of health care alternatives available for treating a given illness. Ethical standards adopted by the health professions preclude advertising, so consumers are denied access to this form of information concerning the relative merits and costs of various forms of care and treatment. Moreover, the reluctance of some physicians to discuss illness in non-ethical terms also tends to keep consumers ignorant of feasible treatment alternatives and makes it nearly impossible for them to exercise rational choice. While individuals can choose their physicians, doctors usually determine the kind and quantity of health services individuals consume. While doctors may have some knowledge of the individual’s financial resources, these considerations are unlikely to have much influence on the type of care prescribed. Introduction to Health Economics 85 Consumers also generally lack knowledge concerning their actual need for care. Thus, the overall benefit of health services is generally uncertain from the consumer’s point of view and the demand for a significant portion of health services is based on the doctor’s judgment. The demand and need for medical care is not always the same. For instance, an individual may demand more care than is required medically. Conversely, he may need medical care, but may not be aware of its value. Need is generated by the incidence of illness, while demand is generated by the interrelationship of illness with other factors. To plan for future use of facilities and personnel, demand rather than need for such resources must be projected. Demand analysis can be applied with appropriate modifications to explain variations in expenditures on medical care services. From the patient’s viewpoint, the need for medical care is not always clear-cut. For example, the distinction between a severe cold and pneumonia may not be noticeable to the consumer. Chest pains may indicate either bronchitis or a serious heart condition. In such instances, a high-income family would be expected to take greater precautions and thus incur higher medical care expenditures than a low-income family. Moreover, even after treatment is begun economic factors may influence its duration. A poor Introduction to Health Economics 86 family may decide to forego the possible benefit from an extra day in hospital or an additional visit to the physician. Medical care is characterized by a low degree of substitutability, most medical needs are highly specific and alternative goods are not able to supply the same level of satisfaction. Moreover, medical care is generally wanted for its own sake, most medical care and treatment are unpleasant and generally are not wanted until it becomes a preferable alternative to the pain and other consequences of illness. This implies that the price elasticity of demand for medical care would tend to be low. Grover C. Wirick has identified five fundamental factors that can have an impact on the

demand for health care services. The first is need, when a person suffers from a condition that requires attention, or he/she has some other reason for seeking medical care or examination. Secondly, there must be a realization of the need. Either the individual or someone acting in his/her behalf must know that the need exists. A number of psychological processes may be involved including awareness of the existence and availability of medical skills as well as the benefit likely to be gained through health services. In addition to these, the Introduction to Health Economics 87 hopes, fears and beliefs of the individual, as well as the other personal factors such as his/ her previous experiences, customers and religion play a significant role. For example, a person with a strong religious conviction against a particular kind of medical treatment may have a different realization of need for care from that of someone with other religious beliefs. Third financial resources must be available to implement the care. This capability may take many forms, including the income and assets possessed by the individual or his/her family, insurance coverage, eligibility for free care under a group or government program and availability of care through welfare programs. Fourth, there must be a specific motivation to obtain the needed care even with the availability of the other forces such as need, realization and resources, something must initiate the action. Fifth is availability of service. The first three forces are characteristics of the patient, while the fifth is a phenomenon of his environment. The fourth force Introduction to Health Economics 88 is somewhat indistinct and could be characteristic of either or both. 2.4.1 Changes in demand for medical care By 'quantity demanded' we mean the quantity demanded at any specific price, all other causal factors held constant. By 'demand' we mean the set of quantities demanded at various price levels, all other causal factors held constant. Change in quantity demanded is shown by a movement across the demand curve, while change in demand is expressed in a shift in the demand curve itself. In the analysis of demand for medical care the focus is on health care, hence the commodity physician care' is used as the major example. Physician care is defined as examinations and treatments administered by physicians to their patients. Physician care is only one of the many commodities in the health care sector. The effects of factors other than the out-of-pocket price on the economic behaviour of consumers are introduced by way of their influence on the basic price-quantity relation. These other factors can be placed into three broad categories. 1. Income Income of consumers is generally assumed to be positively related to demand. That is, if income increases, the quantity demanded at each price will be greater. Change in the level of Introduction to Health Economics 89 income results in a shift in the demand curve. Income is a variable used to measure the ability of the individual to afford medical care, but it is only an approximate measure. Another measure of the affordability of medial care is the individual's level of wealth, including bank deposits, real estate and other assets, less any debt, such as bank loans and mortgages. All these are supposed to measure the individual's ability to pay for medical care. 2. Price of related commodities The demand for a particular commodity is also influenced by the quantities of related commodities consumed. The quantities of these related commodities are, in turn, influenced by their prices. Two classes of commodity relations are of concern to us: complements and substitutes. 3. Tastes Tastes have sometimes been called wants, a term connecting the intensity of desire for particular commodities. The elements that influence the intensity of an individual's desire for medical care include health status, educational background, sex, age, race and upbringing. Any of these can explain differences in the intensity of desire for medical care among individuals. That is, other factors remaining constant, these differences offer explanations as to why one individual's demand shift. The explanation might simply be that the health Introduction to Health Economics 90 status of the first individual is lower than that of the second individual. 2.5 Health and Economic Development Development is the concern of all developing countries. The health planner,

manager, etc., is equally charged with that concern and must be knowledgeable about what development implies and the role health should play in the development of a given country. The following questions are of paramount importance for the health worker in a developing country such as Ethiopia: what is development? How does it differ from economic growth? How can development be measured? What role does health play in development? What role should the health worker play in facilitating development? This subsection will be attempting to provide some answers and insights to these questions. 2.5.1 The meaning of Economic Development Development has been variously defined. The modern view of development perceives it as both a physical reality and state of mind in which society has, through some combination of social, economic and institutional processes, secured the means for obtaining a better life. The definition of "a better life" may vary from one society to another. Development in all societies, however, must consist of at least the following three objectives: Introduction to Health Economics 91 ¬ To increase the availability, distribution and accessibility of life-sustaining goods such as food, shelter, health, security and protection to all members of society; ¬ To raise standards of living, including higher incomes, the provision of more jobs, better education and better health, and more attention to cultural and humanistic values so as to enhance not only material well-being, but also to generate greater individual community and national esteem. ¬ To expand the range of economic and social opportunities and services to individuals and communities by freeing them from servitude and dependence on other people and communities and from ignorance and human misery. 2.5.2 Growth and Development For a long time, Development and Economic growth were used interchangeably. Although the two are closely related they are, however, different. Economic growth can be defined as an increase in a country's productive capacity, identifiable by a sustained rise in real national income over a period of years. The main differences between growth and development can be outlined as follows: Introduction to Health Economics 92 1. Development encompasses the total well-being of the individual, a community or a nation, while economic growth is concerned with the increase in per capita earnings of the people making up the nation. 2. Economic growth is one characteristic of development, yet development must not be measured by the rate of economic growth. It is possible for a country to experience economic growth without becoming developed. A country, for example, may acquire a great wealth from its mineral deposits, but have a low level of health services. This is due to the fact that the wealth goes into the hands of a very small minority who might squander it on luxury goods instead of establishing a viable infrastructure. 3. Development is concerned with the total person, his economic, social, political, physiological, psychic and environmental requirements. If one of these is not fully cater for, development has not been achieved. 2.5.3 Measurement of Economic Development The measurement of development has presented social scientists with a problem of finding the suitable tools and techniques to do so and of interpreting the results of such measurements. Several suggestions have been presented for measuring development. One line of research has suggested Introduction to Health Economics 93 the use of so-called social indicators. The purpose of these is to measure the well-being of the population by examining factors such as health and nutritional status, level of education, housing conditions and so forth. However, it is easier to calculate GNP, per capita incomes and growth rates. As a result, in most reports these variables are used as indicators of Development. Economic Development, in addition to a rise in per-capita income, implies fundamental changes in the structure of the economy characterized by: 1. Rising share of industry, along with the failing share of agriculture in GNP and increasing percentage of people who live in cities rather than the countryside 2. Passing through periods of accelerating, then decelerating

population growth, during which the age structure of the country changes dramatically. 3. Changes in consumption patterns as people no longer spend all their income on necessities, but instead move on to consume durables and eventually to leisure-time products and services. Introduction to Health Economics 94 4. Meeting the needs of the present without compromising the ability of future generations to meets their own needs (sustainability) 5. Participation (mainly) by the citizens of the country in the process as well as the benefit, While economic development and modern economic growth involve much more than arise in per capita income, there can be no development without economic growth 2.5.4 Health Implications of Economic Development The associations between health and national development are complex. The interaction is a two-way phenomenon with health being both influenced by and influencing economic development. Improved health has been considered solely a result of economic growth, a part of the product of growth rather than one of its causes. Some development experts have maintained that health should have low priority in development funding and have tried to justify their opinions with comments such as “only a rich nation can afford the programs to assure its population’s health”, or “a poor nation can not afford improved health”. The concern of development planners is accentuated by the fact that during the demographic transition, lower death rates are Introduction to Health Economics 95 often associated with sustained high birth rates which results in rapid population growth. While the supply of labor may increase as a result of improved health and reduced death rates, there may be no corresponding gain in per capita output. Thus, if economic growth is too slow to absorb the additions to the labour force associated with expanded health programs, greater unemployment, both open and disgusted, may result. Thus, improved health in poor societies can be postulated to produce larger populations, greater poverty and ultimately deterioration in health. However, other development planners and economists are more optimistic regarding the impact of health and nutrition programs on economic growth. There are three different ways by which improved health programs can accelerate development. • Improved health may increase productivity or efficiency of the labour force leading to greater output and reduced cost per unit of output • Better health conditions may serve to open new regions of a country of settlement and subsequent development. • Attitudinal changes towards achievement and entrepreneurship may be lined to health and nutrition Introduction to Health Economics 96 programs. This linkage has a significant importance to stimulate entrepreneur ship in poor countries. It has been apparent that where conditions are worst, relatively simple and low cost health programs can produce dramatic reductions of debility and disability of the labour force. In these situations major increments in productivity are most readily apparent. For instance, in the Philippines at one time a survey of major enterprises indicated a daily absenteeism rate of 35 percent, attributed largely to malaria. After initiation of an ant-malaria program the rate of absenteeism was reduced to 2-4 percent and nearly onefourth fewer laborers were required for any given task. Although one could argue that economic growth has to accelerate the eradication of poverty many economists felt that its impact occurred too slowly. In other words many end not to believe in an instantaneous trickle-down effect of economic growth. Subsequently, a more direct method of poverty reduction, namely the basic needs approach, was advocated; its aim was the direct fulfillment of basic needs such as health, clothing, sanitation, shelter, nutrition and education. 2.5.5 Major determinants of poor health Introduction to Health Economics 97 The following are some of the main determinants of poor health which have direct or indirect interdependence with Economic Development: • Population growth: rapid population growth implies an increased need for medical and other social services • Malnutrition • Sanitary conditions and inadequate shelter • Education There remains a debate on the relation between health status

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improvements and economic growth. It is argued that health status improvements are attained at the expense of fixed capital entailing a smaller economic growth. That is, the investment funds that could have been used for the growth of the economy at large are to be used for investments in the health service sector which has in part a consumption character. Some argue, however, that investment in basic needs, such as in the health service sector, are investments in the health service sector which has in part a consumption character. Some argue, however, that investment in basic needs, such as in the health service sector, are investments in human capital which in turn is growth promoting. Although some tend to conclude that there is a positive relationship between health and economic development, this does not prove that improvement of the health service sector is a sufficient condition for economic development. On the other Introduction to Health Economics 98 hand, a better health status does not guarantee a faster economic growth. The following conclusions may be drawn from the discussions of the relations between health and development. 1. Development is not a simple process. It is a complex intermingling of economic, social, environmental, physiological, psychic, cultural and political factors. 2. The measurement of development is not an easy task. Economics provides certain tools which can be brought to bear on crucial areas of choice where decisions are required. Further research is required in this area so as to develop tools and techniques for evaluation in those areas that are not readily quantifiable. 3. Development is linked not just to the improvement of economic indicators or the attainment of basic needs, but with wider aspirations such as high health status, and with social well-being and change. The Development process embraces not only the so-called “productive” sectors of the economy, but also the social sectors. Introduction to Health Economics 99 Review Questions 1. In what sense are the consumers of health services ignorant? 2. Economic development is a process, what are the necessary situations for a given country to be considered that it is in this process? 3. Outline the major determinants of poor health in a developing country. Introduction to Health Economics 100 4. Improved health can be considered as a precondition for economic development – how? Discuss. 5. Economic development as a complex process is affected and manifested by factors such as – what? 6. Show the policy implications of the WHO definition of health as a concept. Bibliography 1. Folland, Goodman Stano, the Economic of Health and health Care, third edition, 2001. 2. Bowling, A. (1997) Measuring Health: A review of quality of life measurement scales, second edition, Open University Press, Buckingham. 3. Briggs, AH. , Gray, AM. Handling Uncertainty When Performing economic evaluation of health care interventions: Health Technology Assessment 1999;3 (2). Introduction to Health Economics 101 4. Drummond, M., Stoddart, G. , O’Brien, B. , and Torrance, G. (1997) Methods for the Economic Evaluation of Health Care Programmes, second edition, Oxford Medical Publications; Oxford. 5. Johansson, P.O. (1991) An Introduction to Modern Welfare Economics, Cambridge: CUP. 6. Kobelt, G. (2002) Health Economics: An Introduction to Economic Evaluation, second edition, Office of Health Economics; London. 7. Mills,Anne and et.al. (1992), Health Economics for developing countries: A Survival KitLondon. 8. Robinson, R. What does it mean? BMJ Vol. 307, 11th September 1993, PP. 670-673. Introduction to Health Economics 102 CHAPTER THREE COST CONCEPTS AND ECONOMIC EVALUATION Learning Objectives At the end of the chapter, the student will be able to: 1. Understand the meaning and basis of cost as a concept. 2. Be aware of the possibility of using cost concepts to undertake economic evaluation. 3. Be introduced to the possibilities of using cost benefit analysis and cost effectiveness analysis in assessing the performance of health care activities. 4. Revisit the conceptual meaning of opportunity costs. 5. Have ideas about the calculation of future benefits and costs of any economic venture. Introduction to Health Economics 103

6. To explain the effects of scope and viewpoint of an economic evaluation. 7. To describe direct, indirect and intangible costs. 8. To outline the methods needed for costing in an economic evaluation and to give examples of costing methods and cost data types. 9. To introduce health utilities and contingent valuation, how they are calculated, where they might be used and the potential problems with their use. 10. Be able to correctly understand the results of ratios used in economic evaluation. 3.1Definition of Cost Economists define a cost as the value of resources used to produce a good or services. However, the way these resources are measured can differ. There are two main alternatives with respect to measurement of these resources: financial and economic costing. Financial cost represents actual expenditure on goods and services purchased. Costs are thus described in terms of how much money has been paid for the resources used in the project or services. In order to ascertain the financial costs of a project, we need to know the price and quantity of all the resources used or, alternatively, the level of expenditure on these goods and services. Introduction to Health Economics 104 Economists conceptualize costs in broader way. They define costs in terms of the alternative uses that have been forgone by using resources in a particular way. These economic or opportunity costs recognize the cost of using resources as these resources are then unavailable for productive use elsewhere. The basic ideas are that is that things have a value that might not be fully captured in their prices. It is not difficult in many health programmes to identify resources inputs for which little or no money is paid: volunteers working without payment; health messages broadcasts without charge; vaccines or other suppliers donated or provided at large discount by organizations or individuals. Thus, the values of these resources to society, regardless of who pays for them, are measured by opportunity cost. Economic cost then include the estimated value of goods or services for which there were no financial transaction or when the price of a specific good did not reflect the cost of using it productivity elsewhere. The main ways that financial and economic costs differ is in the way they treat: ϖ Donated goods and services ϖ Others inputs whose prices and incorrect or distorted. ϖ Valuation of capital items. Introduction to Health Economics 105 The theory and the concept of cost arise from the fact that economic resources are scarce by nature. Had it not been for the scarcity of resources, the concept and theory of cost may not exist as such. ⎫ Scarcity has two sides: ♣ The infinite nature of human wants ♣ The finite or limited nature of resources available to produce goods and services. 3.2 Types of costs "What is a cynic? A man who knows the price of everything and the value of nothing' (Oscar Wilde) Costs can be defined in many ways (See figure below), but generally can be considered as direct, indirect and intangible. Direct costs are those immediately associated with an intervention such as staff time, consumables etc. Indirect costs might include a patient's work loss due to treatment. Intangible costs may be things like pain, anxiety, quality etc. Benefits, however, can be analyzed in three different ways reflecting the different types of economic analysis used in evaluation. First, benefits can be examined in terms of the immediate (direct) effects on health. These are usually clinically defined units appropriate to the area of study, such as 'lives saved', 'reduction in tumor size', 'change in blood pressure' etc. Second, benefits from an intervention can be considered in more generic terms such as the impact on Introduction to Health Economics 106 general well-being/ happiness/ satisfaction, these are more generally labeled as 'utilities'. The utility of an intervention to an individual is its benefit. Measures such as the quality adjusted Life year (QALY) are used to quantify this third, benefits might be considered in the same terms as costs, which means that benefits must be valued in monetary terms by some means. Introduction to Health Economics 107 Figure 3.1.- Evaluating Costs and Consequences Sources: (Reproduced from Drummond et al., 1997) Introduction to Health Economics Economic Evaluation Resources consumed Health Improvement Cost (C) Effects (E) Utilities (U) Benefits (B) 108

Whatever kind of economic evaluation may be applied, the costs must be assessed. These are divided into costs borne by the ministry of health (like drug and equipment), By patients and their relatives (like transport and food) and By the rest of society (like health education). Next the costs have to be valued in monetary terms; ϖ Direct costs, like wages, pose little problem, ϖ But indirect costs (like time spent in hospital) have to have values imputed to them. ϖ Costs must also be further subdivided in to average, marginal and joint costs, which help decisions on how much of a service, should be provided. ϖ Capital costs (investment in plant, buildings, and machinery) are also important to need due consideration, as discounting and inflation. 3.2.1 which costs should be included? If the evaluation is being made from the widest perspectivethe viewpoint of society as a whole-then three main categories of costs must be considered: • Health service costs • Costs borne by patients and their families Introduction to Health Economics 109 • External costs borne by the rest of society 1. Health Service Costs These will include staff time, medical supplies (including drugs), bed and food services in the case of inpatients, use of capital equipment, and overheads such as water, heating and lighting. These items may be divided into variable costs, which vary according to the level of activity (for example, staff time) and fixed costs, which are, incurred whatever the level of activity (for example, heating and lighting). In the long run, practically all costs become variable since those that are fixed in the short run may be varied-for example, by opening and closing wards, and by building new hospitals. In economic evaluation all such health service costs-both fixed and variable-are referred to as direct costs. 2. Costs Borne By Patients and Their Families These will include out of pocket expenses such as travel, and any cost resulting from caring activities undertaken by the family. These are both direct cost items. In addition, there may also be indirect costs (productivity costs) such as income lost because of absence from work (which is a production loss to society) and any psychological stress experienced by patients, or their families or both. 3. External costs These occur when people not directly involved in a programme experience increased costs because of it. In most Introduction to Health Economics 110 cases these effects are too small and diffuse to merit inclusion in the analysis, but there may be some occasions when they are large enough to require attention. For example, public health legislation enforcing antipollution standards or specifying water purification levels may lead to increase in manufacturing costs and consumer prices (as well as providing health benefits). 3.2.2 How should costs be valued? ϖ The costs identified in physical units (such as hours of staff time, hours of operating theatre use, quantities of drugs and so on) must be valued in monetary terms. ϖ For most direct cost items market prices will be available. ϖ Nursing time can therefore be valued at the appropriate hourly rate; ϖ Medical and surgical supplies can be valued at the prices charged by suppliers; ϖ Electric and water can be valued at the appropriate tariffs; and so on. Strictly speaking, economic evaluation should seek to value all inputs in terms of their opportunity costs-that is, their value in their next best use. Introduction to Health Economics 111 ¬ These measures what is being given up to use resources in health care? ¬ Some times opportunity costs may diverge from market prices. E x a m p l e , a n u r s e w o u l d otherwise be unemployed, and then his or her opportunity cost would be zero and not the hourly wage. ¬ For most practical purposes, however, it is usual to use market prices unless there is strong evidence to suggest that they diverge appreciably from opportunity costs. Indirect costs, for which there are no market prices, pose a more difficult problem of evaluation. Some method has to be used to impute values to them. This is known as “shadow pricing”, and time costs provide a good example. When time is spent in hospital by a patient, or on caring by a relative, and this displaces work time, it is usual practice to use the relevant wage to value the lost time. Introduction to Health Economics 112 If it is

not work time that is displaced, however, other measures must be used. 3.2.3 Average, Marginal, and Joint Costs Most decisions in health care are not concerned with whether or not a service should be provided, or whether or not a particular procedure should be undertaken, but with how much of the service should be provided. That is, should existing levels of provision be expanded or contracted? For example, what family planning services should be made available? This decision requires that attention should be focused on marginal costs-that is, the change in total costs resulting from a marginal change in activity. In the short run, there is often an important difference between the marginal costs of an activity and its average cost, where the average cost is defined as the total cost divided by the total number of units of output. One context in which the distinction between average and marginal costs is important is in relation to duration of hospital stay of inpatients. Many new procedures have reduced the amount of time necessary for a patient to remain in hospital and thereby yield cost savings. When valuing these savings, however, it is important to bear in mind that using average costs /day will generally overstate the savings as the later days of a stay usually cost less than the earlier ones. It is the marginal costs/day that is the relevant measure Yet another problem of cost measurement arises in connection with joint costs. Often a single production process can result in multiple outputs. For example, a single chemical analysis of a blood sample can diagnose the presence of many diseases. How should the cost be allocated to each diagnosis? Similarly, within a hospital setting, there are many common services (like medical records, radiology, operating theatres, laundry, catering, and cleaning) that contribute to a number of specialities. Economic evaluation requires some method for allocating the joint costs of these services to individual programmes or procedures. There are several methods, which may be used to do this. Most of them use some physical unit of utilisation, such as the number of laboratory tests, hours of operating theatre use, or square meters of ward space, to apportion total laboratory, operating theatre, and ward cleaning costs. 3.1.4 Capital Costs Investments in buildings, plant, and equipment that yield a flow of services over a number of years give rise to capital costs. Generally, investment expenditure will be undertaken at the beginning of a project, but the use of items of capital equipment will generate annual capital costs over the lifetime of the asset. These costs have two elements: - namely, interest and depreciation. ϖ Interest costs should be included even if the asset was not acquired with borrowed money because tying up money in an item of capital equipment involves an opportunity cost-that is, interest foregone. ϖ Depreciation costs arise because of the wear and tear that an asset gets through use and the consequent reduction in the length of its life. (Note, however, that land is a capital asset that is not assumed to incur depreciation costs.) Some times an item of capital expenditure is unique to a particular use and has little or no alternative use value (opportunity cost). In such cases, it is referred to as sunk cost. A hospital building or an item of medical equipment may, for example, have considerable value in its existing use, but little resale value. This can provide a powerful case for continuing to use existing assets instead of undertaking new investments because, in an economic evaluation, sunk costs should not be included among annual capital costs. In practice, this consideration is likely to be more important in the case of major capital developments than of individual procedures. 3.3 Viewpoint of an Economic Evaluation It is important to determine at the outset from whose viewpoint an economic evaluation is to be carried out. It may be based on the viewpoint of an individual patient, the hospital, the government, or society at large. The broadest viewpoint is that of society in general, as this will include all the costs and benefits, no matter to whom they accrue. For this reason, it is the preferred approach. Adopting this approach has two main implications that distinguish it from approaches with more limited perspectives. ϖ

Firstly, it usually involves measuring and valuing items that do not have market prices attached to them, such as the time costs that patients incur when undergoing treatment and recuperating. ϖ Secondly, it means that certain costs, or cost savings, or both, should not be included in the evaluation because they are transfers from one sector to another rather than a net cost to society. E.g. free health care. 3.4 Features that characterize an Economic Evaluation/ Analysis First, it deals with both the inputs and outputs, sometimes called costs and consequences, of activities. It is the linkage of costs and consequences, which allows us to reach our decision. Second, Economic analysis concerns itself with choices. Resource scarcity, and our consequent inability to produce all desired outputs, necessitates that choices must, and will, be made in all areas of human activity. These choices are made on the basis of many criteria, sometimes explicit, but often implicit. Introduction to Health Economics 116 Economic analysis seeks to identify and to make explicit set of criteria, which may be useful in deciding among different uses of scarce resources. Economics evaluations: ♦ Always compares any health care programme with an alternative, for example, no treatment or routine care. ♦ Always measure the benefits produced by all alternatives compared. ♦ Always measures the cost of any programme. The above characteristics of economic evaluation/analysis lead us to define economic evaluation as the comparative analysis of alternative courses of action in terms of both their costs and consequences. Therefore, the basic tasks of any economic evaluation are; ♦ To identify, ♦ measure, ♦ Value, ♦ Compare the costs and consequences of the alternatives being considered. “The pursuit of efficient practice is not merely about reducing costs. If it were the most efficient procedure would be to do nothing, as that pushes costs to zero.” (Professor Alan Maynard4). Introduction to Health Economics 117 Economic evaluation of health care programmes aims to aid decision- making with their difficult choices in allocating health care resources, setting priorities and moulding health policy. But it might be argued that this is only an intermediate objective. The real purpose of doing economic evaluation is to improve efficiency: the way inputs (money, labour, capital etc) can be converted into outputs (saving life, health gain, improving quality of life, etc). The choice of what health care to provide is about what economists call allocative efficiency. This means that we strive for the maximization of benefits (however we decide to measure this) subject to given available resources. So, from a fixed resource we aim to get as much out of a range of health care programmes as possible. This will mean that we will need to compare very different interventions, say health promotion advice to quit smoking versus prescribing Relenza versus a procedure on an ingrown toenail. Thus, allocative efficiency is about finding the optimal mix of services that deliver the maximum possible benefit in total. Resources will be directed to interventions that are relatively good (i.e. efficient) at converting inputs into health benefits and a way from those that require larger input for relatively low health gain. This approach may of course be constrained by certain equity considerations, to ensure that certain groups do receive health care. Introduction to Health Economics 118 The choice of how to provide health care is about what economists call technical efficiency. This means that we might strive for minimum input for a given output. For example, if we have decided that performing tonsillectomies on children is worthwhile, part of an allocative efficient allocation of resources, then we may need to examine the efficiency of how we do this. So, if the output we wish to achieve is to successfully remove a child’s tonsils then we might choose between, say, a day case procedure or an inpatient stay. This is an issue of technical efficiency since the output or ‘outcome’ is fixed, but the inputs will differ depending on which policy we adopt. The day case approach may perhaps require more intensive staff input and more follow-up outpatient visits. If this was the case, then inpatient tonsillectomy may be the more technically efficient strategy.

Thus, with any given health care programme an economic evaluation is aiming to make explicit the total resources consumed specifically by that programme (i.e. attributable to it) and the total benefit generated specifically by that programme. Drummond et al (1997) defines economic evaluation as “the comparative analysis of alternative courses of action in terms of both their costs and consequences.” It differs from other forms of analysis since it considers both costs and consequences and is comparative. Introduction to Health Economics 119 Evaluation needs to be comparative as an intervention can only be labeled as good or bad relative to some benchmark or alternative even if this alternative is a ‘do nothing’ strategy. If an evaluation is not comparative and does not consider both costs and consequences, then it is only a partial evaluation. It is a description of either just the costs or just the benefits of one intervention in isolation. This is most uninformative since it is one-dimensional and without a context by which to judge relative performance (efficiency). If both costs and consequences are considered, but no comparator is provided, then the study is again only a partial evaluation, described as a cost-outcome study. It lacks context and is of limited use. If alternatives are compared, but only in terms of costs or benefits and not both then again the study only provides a partial evaluation and can be labeled an effectiveness study or a cost analysis. It would be comparative, but only across onedimension. Hence, an economic approach can be considered a full evaluation technique. Whatever the approach, the same three-stage process for the assessment of all costs and benefits can be applied. All relevant cost and benefit variables must be i) identified, ii) quantified and iii) valued. At the start of an evaluation, it must be determined which costs and benefits are sufficiently important to merit inclusion Introduction to Health Economics 120 in the study. This should be separate from the measurement stage so as to avoid the study being entirely data driven (i.e. the more intangible consequences of an intervention might be considered equally important). The identification of relevant benefits and costs will define the variables in the study. These can be broadly classified into changes in resource use, changes in productive output and changes in health state. The next stage is to measure changes in these variables brought about by the intervention in question. Often it is important that this is done before valuation, as it is necessary to know the magnitude of gains or losses before values can be attached. Presenting variables in terms of ‘natural’ quantities or frequencies (i.e. hour’s worked or clinical units) can also be very useful in terms of generalisability. Others can use these data and apply values relevant to their own setting (i.e. different cost structures or health values). The differential timing of costs and benefits must also be considered in an evaluation. The effects of health treatments do not always occur at the same point in time. Costs may be incurred today, but the benefit may not arrive until next year (i.e. preventative treatments, health promotion), part of this future benefit might be that future costs will be avoided. 100 Birr spent today may not have the same value as 100 Birr spent next year because of inflation; interest on savings and Introduction to Health Economics 121 not least a positive rate of time preference. People may just prefer to have 100 Birr in their pocket today rather than 100 Birr in a week or a month or a year, because it offers them more choices. This can be incorporated into economic evaluation by the notion of discounting future costs and benefits to their present day value. A simple formula can be applied to do this for any chosen discount rate, normally within the range of 0-10%. Material covered so far in this pack has been very much at a conceptual level. Before we move onto some more practical applications the following revision questions may be useful. 3.5. Types of Economic Evaluation The different ways of looking at benefits combined with cost analysis represent the different techniques of economic evaluation: cost effectiveness analysis (CEA), cost utility (CUA) and cost benefit analysis (CBA). When to see each of the above techniques will depend on the nature of the question to be addressed, which may be a choice between

alternative clinical strategies for a condition: timing of an intervention; settings for care; types and skill-mix of personnel proving care; programmes for different conditions; scale or size of a programme; or other ways to improve health. 3.5.1. Cost-Effectiveness Analysis Introduction to Health Economics 122 When different health care interventions are not expected to produce the same outcomes both the costs and consequences of the options need to be assessed. This can be done by cost-effectiveness analysis, whereby the costs are compared with outcomes measured in natural units-for example, per life saved, per life year gained, and pain or symptom free day. Many cost-effective analyses rely on existing published studies for effectiveness data, as it is often too costly or time consuming to collect data on costs and effectiveness during a clinical trial. Where there is uncertainty about the costs and effectiveness of procedures sensitivity analysis can be used, which examines the sensitivity of the results to alternative assumptions about key variables. In what follows these methods of analysis are described and the possibilities how the benefits of alternative interventions should be valued are discussed. CEA is concerned with technical efficiency issues, such as: what is the best way of achieving a given goal or what is the best way of spending a given budget. Comparisons can be made between different health programmes in terms of their cost effectiveness ratios: cost per unit of effect. Under CEA effects are measured in terms of the most appropriate unidimensional natural unit. So, if the question to be addressed was: what is the best way of treating renal failure? Then the most appropriate ratio with which to compare programmes might be 'cost per life saved'. Similarly, if we wanted to Introduction to Health Economics 123 compare the cost-effectiveness of programmes of screening for Down's syndrome the most appropriate ratio might be 'cost per Down's syndrome fetus detected'. In deciding whether long-term care for the elderly should be provided in nursing homes or the community the 'cost per disability day avoided' might be the most appropriate measure. ϖ The advantage of the CEA approach is that it is relatively straightforward to carry out ϖ It is often sufficient for addressing many questions in health care. However, it is not comprehensive. The outcome is uni-dimensional under this analysis, but often health programmes generate multiple outcomes. ϖ For example, in Downs' syndrome screening, foetus detected is one outcome, but miscarriages avoided might be another very relevant outcome measure, especially if, say, blood testing is being compared to amniocentesis. But this cannot be incorporated into this form of analysis. So, CEA not only assumes that the outcome of the health programme is worthwhile per se, but also that it is the most appropriate measure. A further problem with CEA is comparability between very different health programmes. Cost per foetus detected may be a useful way to compare the efficiency of blood testing versus amniocentesis, but how would these be compared to, say, drugs aimed at reducing cholesterol. Health programmes with different Introduction to Health Economics 124 aims cannot be compared with one another using CEA: cost per unit reduction in cholesterol cannot meaningfully be compared with foetus detected. Hence, CEA is useful when comparing programmes within like areas, where common 'currencies' can be used. If the outcomes of alternative procedures or programmes under review are the same, or very similar, then attention can focus upon the costs in order to identify the least cost optionthe method of evaluation will be cost-minimisation analysis. If, however, the outcomes are not expected to be the same, then both the costs and consequences of alternative options need to be considered. Cost-effectiveness analysis is one method of economic evaluation that allows this to be done. 1. Measures of Effectiveness In order to carry out a cost effectiveness analysis it is necessary to have suitable measures of effectiveness. These will depend on the objectives of the particular interventions under review. In all cost effectiveness analysis, however, measures of effectiveness should be defined in appropriate natural units and, ideally, expressed in a single dimension. Common

measures used in several studies have been "lives saved" and "life years gained". Thus, Boyle and colleagues, in their study of neonatal intensive care of very low birth weight Introduction to Health Economics 125 babies, measured effectiveness in terms of mortality rates at the time of discharge of newborn infants from hospital. Their study compared two periods-one before the introduction of neonatal intensive care, and another after its introduction-and measured cost effectiveness in terms of additional costs per life saved. Several other measures of effectiveness have been used by different researchers (see the box below), these have included the number of pain or symptom free days resulting from alternative drug regimens in the treatment of duodenal ulcers; and the number of episodes of fever cured and deaths prevented in the treatment of chloroquine resistant malaria in African children. Most of the above mentioned studies express effectiveness in terms of a single dimension and thereby permit direct comparison between alternative procedures in terms of their marginal cost per unit of outcome. Sometimes, however, the alternatives under examination have multiple outcomes. Nonetheless, many of these choices can be dealt within the cost-effectiveness analysis framework. Thus, if one procedure emerges as less costly and of equal or greater effectiveness than all the other options on each dimension of effectiveness, it is clearly the most cost effective option. For example, The comparison of day surgery with overnight inpatient care for cataract surgery, measured outcomes in terms of the number of both operative and postoperative Introduction to Health Economics 126 complications, and in terms of visual acuity of patients three to six days and 10 weeks to six months after surgery. Patient satisfaction was also elicited through a questionnaire. As day surgery emerged as the more effective option on practically all of these effectiveness measures, and was subsequently less costly, the evidence suggests that it is the preferred option. One argument for carrying out analysis in this way- that is, not always seeking to combine outcome measures into a single unit, is that the variations across a number of dimensions are made clear to decision makers rather than being concealed within an aggregate measure. This can sometimes permit more informed decision-making, although it can also result in tortuous attempts to compare apples and oranges. Examples of measures of effectiveness • Cases treated appropriately • Lives saved • Life years gained • Pain or symptom free days • Cases successfully diagnosed • Complications avoided 2. Costs-Minimisation Analysis Introduction to Health Economics 127 Cost-minimisation analysis is an appropriate evaluation method to use when the case for an intervention has been established and the programmes and procedures under consideration are expected to have the same or similar outcomes. In these circumstances, attention may focus on the cost side of the equation to identify the least costly option. Cost –Minimisation Is concerned only with technical efficiency 1 Can be regarded as a narrow form of cost effectiveness analysis Evidence is given on the equivalence of the outcomes of different interventions As outcomes are considered to be equivalent no different decisions can be made on the basis of costs Advantages ¬ Simple to carry out, requires costs to be measured, but only that outcomes can be shown to be equivalent ¬ Avoids needlessly quantifying data Disadvantages ϖ Can only be used in narrow range of situations. ϖ Requires that outcomes be equivalent Example 1. Cost-Minimization Analysis Introduction to Health Economics 128 Suppose we are comparing two programmes involving minor surgery for adults. Both accomplish the outcome of interest, and from an examination of effectiveness data differ in no other significant respects except that one requires hospital admission for at least one night, while the other (a day surgery programme) does not. If we identified the common outcome of interest – operations successfully completed – we would find that it could be achieved to the same degree (i.e. identical number of surgeries) in either programme, though presumably at different costs. The economic evaluation is then essentially a search for the least cost alternative. Analysis such as this is often called cost-

minimization analysis. We might also be interested in the distribution of costs (e.g. in this case to what extent does the day-surgery programme shift costs to the patient), but our principal efficiency comparison will be made on the basis of cost per surgical procedure. CMA is really a special form of cost-effectiveness analysis, where the consequences of the alternative treatments being compared turn out to be equivalent. It can be seen from the box below that there are nine possible outcomes when one therapy is being compared with another. In three of the nine cases the analysis reduces to a CMA. In general Cost-effectiveness analysis (CEA) is: - Concerned with technical efficiency. Introduction to Health Economics 129 - What is the best way of achieving a given goal with least resources? - What is the best way of spending a given budget? - Used when the interventions being compared can be analyzed with common measures. Advantages - Relatively simple to carry out. - Often able to use outcome measures which are meaningful in a particular field. Disadvantages ♣ Since outcome is uni-dimensional, cannot incorporate other aspects of outcome into the cost-effectiveness ratio. ♣ Interventions with different aims/goals cannot be compared with one another in a meaningful way. ♣ Meanings of outcome measure not always clear, i.e. what is value of a case detected in a screening programme. ♣ May have situations when the option with the highest cost effectiveness ratio should be chosen. Example 2. Cost-Effectiveness Analysis Suppose that our interest is now the prolongation of life after renal failure and that we are comparing the costs and consequences of hospital dialysis versus kidney Introduction to Health Economics 130 transplantation. In this case, the outcome of interest – lifeyears gained – is common to both programmes; however, the programmes may have differential success in achieving this outcome, as well as differential costs. Consequently, we would not automatically lean toward the least cost programme unless, of course, it also resulted in a greater prolongation of life. In comparing these alternatives we would normally calculate this prolongation and compare cost per unit of effect (i.e. cost per life-year gained). Such analyses, in which costs are related to a single, common effect, which may differ in magnitude between the alternative programmes, are usually referred to as cost-effectiveness analysis. Note that the results of such comparisons may be stated either in terms of cost per unit of effect, as in this example, or in terms of effects per unit of cost (life-years gained per dollar spent). The latter is a particularly useful approach when working within a given budget constraint, as long as the alternatives under consideration are not of radically different scale. Furthermore, although the alternatives used in this example are similar in that both could be considered variants of an overall renal programme, it should be noted that costeffectiveness analysis could be performed on any alternatives, which have a common effect. Thus, kidney transplantation could be compared to heart surgery if the common effect of interest was life-years saved. Similarly, an influenza immunization programme could be compared to a home care Introduction to Health Economics 131 programme if a common effect of interest, perhaps disability days avoided, could be identified. 3. Discounting Benefits (in cost-effectiveness analysis) Costs incurred at different points in time need to be “weighted” or discounted to reflect the fact that those that occur in the immediate future are of more importance than those that accrue in the distant future. This raises the question: should the benefits or effects of alternative procedures also be discounted? (For details about discounting refer to section three of this material) In answering this issue there is a difference among economists. If a zero discounting (no discounting applied) were adopted, the main consequence would be to change the relative cost effectiveness of different procedures. Using a positive discount rate means that projects with long lasting effects receive lower priority. If a positive rate is replaced by a zero rate, procedures such as neonatal care-which lead to benefits over the recipient’s entire future lifetime-will, become relatively more cost effective. In practical

terms, it is probably true to say that while the case for using a zero discount rate for benefits has powerful intellectual and may gain empirical support in the future, it will be too hasty to recommend that positive rates be discarded in economic evaluations. In general: Introduction to Health Economics 132 ϖ Cost-effectiveness analysis is a form of economic evaluation in which the costs of alternative procedures or programmes are compared with outcomes measured in natural units-for example, cost per life year saved, cost per case cured, cost per symptom free day. ϖ Effectiveness data are ideally collected from economic evaluations built in alongside clinical trials. In the absence of dedicated trials researchers need to draw on the existing published work. ϖ Sensitivity analysis should be applied when there is uncertainty about the costs and effectiveness of different procedures. This investigates the extent to which results are sensitive to alternative assumptions about key variables. ϖ There is debate among economists about whether benefit measures should be "time discounted" in the same way as costs. If they are not, projects with long lasting effects will become relatively more cost effective-for example, maternity services and health promotion. But it will be probably wrong to recommend this as a standard practice. Introduction to Health Economics 133 The following case study shows how cost-effectiveness analysis may be used in practice. Case Study 1 Introduction to Health Economics 134 A Cost-effectiveness study – Exercise therapy for Knee-Pain Background. Knee pain is common in the general population and a major cause of morbidity. Much of this is attributable to osteoarthritis. The cost of musculoskeletal disease is high (estimated at 2.5% of GNP in developed nations, 1992) and osteoarthritis is the commonest joint disease. In addition to costs arising directly from symptoms and treatment of osteoarthritis, patients with osteoarthritis have significantly higher medical costs for a range of other conditions (respiratory, cardiovascular, gastrointestinal, neurological, psychiatric conditions and general medical care). Thus, the economic burden of this disease is high. Treatments. The two main palliative treatments for knee pain are exercise or non-steroidal anti-inflammatory drugs (NSAIDs). NSAIDs are commonly used in the treatment of osteoarthritis, but are costly and can cause gastrointestinal problems. Exercise may be a more favorable alternative since quadriceps muscle strength is known to be reduced in osteoarthritis. Since this weakness is associated with disability it is pertinent to examine the costs and consequences of muscle strengthening regimes. Study Objective: To evaluate the cost-effectiveness of regular home exercises in reducing the burden of knee pain in the community compared with placebo drug. Study Methods: An economic evaluation was conducted prospectively alongside a randomized controlled trial. Cost data were collected from GP case notes and by patient questionnaire. Outcomes were collected by the clinical trial. Economic analysis was in the form of a cost-effectiveness study. 1 Outcomes: The principle outcome measure was change in knee pain at two years measured using the Western Ontario McMaster's Universities Osteoarthritis Index (WOMAC) knee specific assessment questionnaire. Costs: Three main categories of cost were included in this analysis: Direct treatment costs incurred by the treatment programmed. Knee-pain related medical costs (hospital and community). Knee-pain related costs to patients and family related to accessing health services. Results: The overall cost of achieving a clinically significant reduction in pain (greater than 50% on the WOMAC scale) after 2 years was compared for each intervention. For the exercise group this was 1,024 Birr and for the placebo group this was 129 Birr. Thus, due to relatively high training costs and low effectiveness, the exercise intervention was found to be less cost-effective than a placebo drug. Comment This study addresses a technical efficiency issue. What is the best way of achieving a given clinical outcome? A cost effectiveness analysis is therefore, the most appropriate study design. Comparison is confined to interventions within the same disease and condition area, so a single outcome measure is sufficient. However, given that knee-pain may impact on quality of life

more generally, a uni-dimensional outcome such as WOMAC pain score may not be the most relevant measure. Multi-dimensional outcome measures may in fact produce a different economic result. Ref. Doherty M et al. A community based randomized intervention study examining the effects of exercise on knee Introduction to Health Economics 135 3.5.2. Cost-Utility Analysis (CUA) CUA is concerned with technical efficiency and allocative efficiency (within the health care sector). It can be thought of as a sophisticated form of CEA, since it also makes comparisons between health programmes in terms of costeffect ratios. However, CUA differs in the way it considers effects. These are multidimensional under this form of analysis. CUA tends to be used when quality of life is an important factor involved in the health programmes being evaluated. This is because CUA combines life years (quantity of life) gained as a result of a health programme with some judgment on the quality of those life years. It is this judgment element that is labeled utility. Utility is simply a measure of preference, where values can be assigned to different states of health (relevant to the programme) that represent individual preferences. This is normally done by assigning values between 1.0 and 0.0, where 1.0 is the best imaginable state of health (completely healthy) and 0.0 is the worst imaginable (perhaps death). States of health may be described using many different instruments which provide a profile of scores in different health domains. EuroQol EQ-5D for example, simplifies health into just five domains (such as mobility, selfcare, usual activities, pain/discomfort and anxiety/depression). ϖ Each domain is given a score from 1 to 3, Introduction to Health Economics 136 ϖ So the health profile would read 11111 for the best scores in all domains ϖ 33333 for the worst. EuroQol EQ-5D has 243 possible health profiles, all of which have been assigned a utility value by general population surveys. This approach of using utility is not restricted to similar clinical areas, but can be used to compare very different health programmes in the same terms. As a result, 'cost per QALY gained' league tables are often produced to compare the relative efficiency with which different interventions can turn resources invested into QALYs gained. It is possible to compare surgical, medical, pharmaceutical and health promotion interventions with each other. Comparability then is the key advantage of this type of economic evaluation. For a decision-maker faced with allocating scare resources between competing claims, CUA can potentially be very informative. However, the key problem with CUA is the difficulty of deriving health benefits. Can a state of health in fact be collapsed into a single value? If it can then, whose values should be considered in these analyses? For these reasons, CUA remains a relatively little used form of economic evaluation. Table 3.1. - Advantages and disadvantages of Cost per QALY gained 'league tables' Introduction to Health Economics 137 Pros • reveals opportunity cost • common currency • comparison across diseases • considers length and quality of life • investment type problem- "best returns" • underlying principle – buy "cheap" QALYs not "expensive" QALYs Cons • What of equity? • A QALY is a QALY is a QALY, or is it? • What of equality of access? • only health service costs • What of other health benefits? • patient information/ reassurance • Comparability of C-U-A studies • Lack of them! • Apply locally? 1. When should CUA be used? The following are a number of situations where you might wish to use CUA: 1.When health-related quality of life is the important outcome. For example, in comparing alternative programmes for the treatment of arthritis, no programme is expected to have any impact on mortality, and the interest is focused on how well the Introduction to Health Economics 138 different programmes will be improving the patient's physical function, social function, and psychological well being; 2.When the programme affects both morbidity and mortality and we wish to have a common unit of outcome that combines both effects. For example, treatments for many cancers improve longevity and improve long-term quality of life, but decrease quality of life during the treatment process

itself. 3.When the programmes are being compared have a wide range of different kinds of outcomes and we wish to have a common unit of output for comparison. For example, if you are a health planner who must compare several disparate programmes applying for funding, such as expansion of neonatal intensive care, a programme to locate and treat hypertension, and a programme to expand the rehabilitative services provided to post-myocardial infarction patients; 4.When we wish to compare a programme to others that have already been evaluated using cost-utility analysis. 2. When CUA should not be used? 1. When only intermediate outcome data can be obtained. For example, in a study to screen employees for hypertension and treat them for one year, intermediate outcomes of this type cannot be readily converted into QALYs for use in CUA. Introduction to Health Economics 139 2. When the effectiveness data show that the alternatives are equally effective in all respects of importance to consumers (e.g. including side-effects). In this case, cost-minimization analysis is sufficient; CUA is not needed; 3. When the effectiveness data show that the new programme is dominant; that is, the new programme is both more effective and less costly (win-win). In this case, no further analysis is needed; 4. When the extra cost of obtaining and using utility values is judged to be in itself not cost effective. This is the case above in points 2 and 3. It would also be the case even when the new programme is more costly than the old, if effectiveness data show such an enormous superiority for the new programme that the incorporation of utility values could almost certainly not change the result. It might even be the case with a programme that is more costly and only somewhat more effective, if it can be credibly argued that the incorporation of any reasonable utility values will show the programme to be overwhelmingly cost-effective. 3. Measuring Quality Measuring a person's quality of life is difficult. Nonetheless, it is important to have some means to have for doing so since many health care programmes are concerned primarily with Introduction to Health Economics 140 improving the quality of a patient's life rather than extending its length. For this reason, various quality of life scales have been developed in recent years. The Nottingham health profile is one quality of life scale that has been used quite widely in Britain. This comprises of two parts. ¬ The first measures health status by asking for yes or no responses from patients to a set of 36 statements related to six dimensions of social functioning: ϖ Energy, ϖ Pain, ϖ Emotional reactions, ϖ Sleep, ϖ Social isolation, ϖ Physical mobility. These responses are then "weighted" and a score of between 0 and 100 is assigned to each dimension. ¬ The second part asks about seven areas of performance that can be expected to be affected by health: ⎤ Employment, ⎤ Looking after the home, ⎤ Social life, Introduction to Health Economics 141 ⎤ Home life, ⎤ Sex life, ⎤ Hobbies, ⎤ Holidays. The Nottingham health profile has been applied, for example, in studies of heart transplantation, rheumatoid arthritis and migraine, and renal lithotripsy. Other quite widely used measures include the sickness impact profile and the quality of wellbeing scale. Recently, a new outcome measure, the Sf-36 health survey questionnaire, has been gaining popularity. After testing it on 1980 patients in two general practices it was considered to be a promising measure which is "easy to use, acceptable to patients, and fulfils stringent criteria of reliability and validity". Although all of these scales embody some form of scoring scheme, they do not usually generate a single quality of life score. This means that, although they are of considerable value in assessing the outcomes of interventions in the case of particular diseases or disabilities, they cannot be used to compare outcomes between different programmes. To do this, generalisable measure of quality is necessary. One of the earliest measures to be developed-and one which has subsequently been used widely to calculate QALYs –is the Rosser index. 4. Rosser Index Introduction to Health Economics 142 Rosser and her colleagues described health status in terms of two dimensions: disability and distress. The states of illness are classified into eight categories of disability and four categories of distress. By combining these

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categories of disability and distress 32 (8 times 4), different states of health were obtained. Rosser then interviewed 70 respondents (a mixture of doctors, nurses, patients and healthy volunteers) and, by using psychometric techniques sought to establish their views about the severity of each state relative to other states. The final results of this exercise were expressed in terms of a numeric scale extending from 0 = dead to 1 = perfect health. With this classification system it becomes possible to assign a quality of life score to any state of health as long as it is placed in an appropriate disability or distress category. Although actual scores generated through the Rosser study have been the source of some criticisms, Gudex and Kind reported that a single training session on the approach was sufficient to obtain a high level of agreement between doctors on rating patients and that these descriptions could be used to categories patients reliably, accurately, and quickly. 5. Quality – Adjusted Life – Years (QALY) One of the features of conventional CUA is its use of the QALY concept; results are reported in terms of cost per QALY gained Introduction to Health Economics 143 QALYs: - combine life years gained with a measure of the quality of those years. Quality is measured on a scale of 0 to 1. With 0 equated to being dead and 1 equated to the best imaginable state of health. Combine all dimensions of health & survival into a single index. - Cu ratio = cost A – cost B QALY A – QALY B 6. What is the QALY concept? The advantage of the QALY as a measure of health outcome is that it can simultaneously capture gains from reduced morbidity (quality gains) and reduced mortality (quantity gains), and combine these into a single measure. Moreover, the combination is based on the relative desirability of the different outcomes. The QALY approach, which forms a key part of most costutility analyses, has been the subject of some criticism. It has been accused of discriminating against elderly people, making illegitimate interpersonal comparisons, disregarding equity considerations, and introducing bias into quality of life scores. Rival measures that are claimed to be sound theoretically, such as "healthy years equivalents" (HYEs), have also been put forward. It has, however, recently been claimed that under Introduction to Health Economics 144 most assumptions QALYs and HYEs will lead to identical project rankings. Amid all this debate it is as well to bear in mind that decisions have to be made about the allocation of resources and costutility analysis is probably the most sophisticated form of economic evaluation available at present. However, sensible use of the technique and interpretation of research findings based on the approach should recognise that cost utilityanalysis is still at a fairly early development stage and treat it accordingly. That is, decision makers should exercise appropriate care, caution, and intelligence. DALY: The Disability-Adjusted Life Year, a measure akin to the QALY in aggregating survival and quality of life effects, but normally advanced as a method of estimating the burden of illness associated with a disease, rather than the costeffectiveness of health care interventions. Introduction to Health Economics 145 The following case study shows how cost-utility analysis may be used in practice Case Study 2 Introduction to Health Economics 146 A Cost-Utility study – Interferon Beta for Multiple Sclerosis Background: Clinical trials have established that interferon beta preparations do have some effect in reducing MS disease activity. This has been reported in terms of reduction in number of relapses or lesion size identified by MRI. However, little is known about the impact on quality of life or how cost-effectively this can be generated using this intervention. Study Objective: To identify to what extent interferon beta generates quality of life (QOL) gains. To measure and value QOL gains. To assess the net costs to the health service and society associated with interferon beta. To compare net costs and QOL gains in a cost-utility model. Study Methods: Data were collected from existing trials of interferon beta and from information on the natural history of MS. New data were collected on QOL and costs from a group of MS patients. A sub-group was used for utility measurement (the valuation of

different health states). Outcome: The key outcome measure was cost per qualityadjusted life year (QALY). Result:. Using current clinical data on the effectiveness of interferon beta the best estimate in terms of a cost-utility ratio was 809,000 Birr per QALY gained. Allowing for a possible impact on disease progression over different time periods produced cost-utility rations in the range 228,300 Birr - 328,300 Birr. Thus, interferon beta does produce gains in QOL, but these are occasional and short-term and can only be achieved with a very large additional cost. Comment: This study gathers data to supplement existing information about this drug and constructs a model to aid decision-making. CUA is the appropriate study design since change in QOL is an essential outcome of this intervention. Also for comparability purposes, CUA presents the decisionmaker with a common currency across different disease groups. Ref. parkin D, McNamee P, Jacoby A, Miller P, Thomas S, Bates D. A cost-utility analysis of interferon beta for multiple sclerosis. Health Technology Assessment, 1998; Vol.2: no.4 Introduction to Health Economics 147 3.5.3. Cost-Benefit Analysis Cost benefit analysis is the most comprehensive and theoretically sound form of economic evaluation and it has been used as an aid to decision making in many different areas of economic and social policy in the public sector for more than fifty years. Cost-Benefit analysis (CBA) estimates and totals up the equivalent money value of the benefits and costs to the community of projects to establish whether they are worthwhile. These projects may be dams and highways or can be training programmes and health care systems. The main difference between cost-benefit analysis and other methods of economic evaluation that were discussed earlier in this series is that it seeks to place monetary values on both the inputs (costs) and outcomes (benefits) of health care. Among other things, this enables the monetary returns on investments in health to be compared with the returns obtainable from investments in other areas of the economy. Within the health sector itself; the attachment of monetary values to outcomes makes it possible to say whether a particular procedure or program offers an overall net gain to society in the sense that its total benefits exceed its total costs. Cost-effectiveness and cost-utility analysis do not do this because they measure costs and benefits in different units. CBA requires programme consequences to be valued in Introduction to Health Economics 148 monetary units, thus, enabling the analyst to make a direct comparison of the programmes incremental cost with its incremental consequences in commensurate units of measurement, be they Birr, dollars, or pounds. CBA compares the discounted future streams of incremental programme benefits with incremental programmes costs; the difference between these two streams being the net social benefit of the programme. In simple terms, the goal of analysis is to identify whether a programme's benefits exceed its costs, a positive net social benefit indicating that
1 a programme is worthwhile. CBA is a full economic evaluation because programme outputs must be measured and valued. In many respects CBA is broader in scope than CEA/CUA. Because CBA converts all costs and benefits to money, it is not restricted to comparing programmes within health care, but can be used (although not without problems) to inform resource allocation decisions both within and between sectors of the economy. CBA is broader in scope and able to inform questions of allocative efficiency, because it assigns relative values to health and non-health related goals to determine which goals are worth achieving, given the alternative uses of resources, and thereby determining which programmes are worthwhile. ϖ Both costs and benefits are assigned a monetary value. The benefits of any intervention can then be compared directly with any costs incurred. Introduction to Health Economics 149 ϖ If the value of benefits exceeds the costs of any intervention, then it is potentially worthwhile to carry that intervention out. ϖ If society funds projects for a given budget, then it can maximise the benefits generated by social spending. ϖ It is concerned with allocative efficiency. ϖ It is concerned with the question, is a particular goal

worthwhile. Potentially it can answer questions such as should extra money be used for heart transplants or improving housing. ϖ Method requires that all resources and benefit generated by an intervention need to be assigned a monetary value. Therefore, needs to cost things which have no market value, i.e, changes in health, quality of life, length of life, pain, etc. ϖ Methods of valuing ¬ Willingness to pay (WTP) ¬ Human Capital Approach The net welfare gain or net value of a project X (NVX) is equal to NVX = WTPX – WTY Where y refers to the next best alternative project. If the latter is not or can not be defined NVX = WTPX – WTPXi Where WTPXi refers to society while WTP is for the inputs used alternatively in the economy at large. Introduction to Health Economics 150 If NVX is positive then, project X may be undertaken. When several projects compete with each other, it is evident that the one with the highest NV needs to be selected in order to maximize welfare. This shows the CBA for projects that have benefits or costs in the current period. It is evident that projects may also entail future benefits and future costs. Some modifications in the calculation of net value will be required in this case. Note that individuals prefer a net value of 1$ received now to 1$ in the future. It follows that one cannot simply add up benefits or costs that are related to different points in time. A social discount rate, denoted as r, will enable use to add up a steam of net benefits. Namely, 1$ in year one will be worth (1tr) $ in year two, (1tr) 2 in year three etc.; conversely, 1$ in year two is worth (1/1tr) $ in year one, 1$ in year three is worth (1/1tr)2 $ in year one etc. The value in year one of a $received or paid in the future is called the present value of that dollar. Making use of the social discount rate r, we can calculate the net present value (NPV) of a project. NPV = [(Bt – Ct) / (1+r) – 1] Introduction to Health Economics 151 Where 'B' and 'C' refer to benefits and costs respectively, with 't' is the time index. In fact, 'Bt' is equal to the WTP for the nth project at time 't', while 'Ct' has to be understood as the benefits forgone in period 't'. Note that if NPV >0 society's welfare will increase; hence the project can be adopted. If several projects are competing with each other the one with the highest NPV should be chosen. The following case study shows how cost-benefit analysis may be used in practice. Case Study 3 Introduction to Health Economics 152 A cost-benefit study – Occupational Health Services Background.: Most large organizations choose to provide an occupational health service (OHS) beyond that which is required by law. Whilst the input costs (labour, capital, etc) of OHS are very clearly identifiable the outputs are not always directly observable since benefits may be multidimensional and sometimes inherently intangible. Consequently, it is unclear whether the benefits of these activities outweigh their costs. In an environment of competition for resources lack of evidence on cost-effectiveness is likely to be regarded the same as activities demonstrated not to be cost-effective, whereas those activities that can demonstrate costeffectiveness will be supported. Study objective: To quantify the value added by OHS for a specific organization. Study Methods: OHS was conceptualized as a form of insurance policy, which individual managers chose to purchase at different levels of cover. Under this model, OHS is purchased in order to reduce the risk and impact of negative events whose cost, timing and frequency is uncertain. The contingent valuation methodology was used to elicit monetary valuations of benefits from these managers. It is based on "stated" rather than "revealed" preferences. In a market, preferences are revealed by individual's actions the surveybased contingent valuation methodology (CVM) requires individuals to state values for a particular good or service. By asking for stated preferences, CVM allows for a monetary valuation of a particular 'project's' benefits. Contingent valuation has two types of question to elicit values, 'willingness-to-pay' (WTP) and 'Willingness-to-accept' (WTA) questions. OH cost data are then compared with benefit valuations generated by the contingent valuation survey in order to construct a cost-benefit analysis. Results: The maximum amount

respondents are 'willing to pay (WTP)' for the benefits provided by OHS is ₤300 per employee per year (medial value). The minimum amount respondents are 'willing to accept (WTA)' as compensation for a withdrawal of OHS is ₤400 per employee per year (median value). The aspect of OHS valued most highly is the ability to enhance workplace safety. The aspect valued least is the possible impact on reducing medico-legal costs. Cost-benefit analysis shows that OHS generates a positive value added range. Sensitivity analysis shows that WTP and WTA values would have to be considerably lower before the overall economic result is reversed. Comment: In the absence of data on the benefits of OHS, WTP and WTA techniques provided a means of quantifying and moreover valuing the multidimensional consequences' of engaging in this activity. These results were then used in a simple cost-benefit equation, to measure net economic impact. Introduction to Health Economics 153 Review Questions 1. Discuss the difference between opportunity cost and outlay costs and show their practical implication. 2. Costs are incurred in all economic activities – why? 3. Explain the cost implications of ill health. 4. Define cost benefit analysis and explain its difference from cost effectiveness analysis. 5. Define the terms net present value and discount rate. Introduction to Health Economics 154 Bibliography 1. Bowling, A. (1997) Measuring Health: A review of quality of life measurement scales, second edition, Open University Press, Buckingham. 2. Briggs, AH. , Gray, AM. Handling Uncertainty When Performing economic evaluation of health care interventions: Health Technology Assessment 1999;3(2). 3. Drummond, M., Stoddart, G. , O'Brien, B. , and Torrance, G. (1997) Methods for the Economic Evaluation of Health Care Programmes, second edition, Oxford Medical Publications; Oxford. 4. Johansson, P.O. (1991) An Introduction to Modern Welfare Economics, Cambridge: CUP. 5. Kobelt, G. (2002) Health Economics: An Introduction to Economic Evaluation, second edition, Office of Health Economics; London. 6. Mills,Anne and et.al. (1992), Health Economics for developing countries: A Survival KitLondon. 7. Robinson, R. What does it mean? BMJ Vol. 307, 11th September 1993, PP. 670-673. Introduction to Health Economics 155 CHAPTER FOUR HEALTH CARE FINANCING Learning Objectives At the end of this chapter, the student will be able to: 1. Identify the factors that influence the choice of a financing system. 2. Explore the different sources of financing the health service sector. 3. Understand the strong and weak points of different financing mechanisms. 4.1Definition of the health sector The precise definition of what services and activities comprise of the health sector is necessary to guide data collection and, especially, to make comparisons of health systems across countries or at different times. The following pairs of items show the difficulty of drawing a line between aspects of the health sector/non-health sector. Which should be included within the definition of the health sector? ¬ Heath services
1 Environmental services (e.g. water, sanitation, Environnemental pollution control, occupation safety etc.) -Hospitals, social waelfare institutions -Education and training, pure medical research Introduction to Health Economics 156 -Medical social work; social work -Formally trained medical practitioners; traditional medical practitioners In practice, the boundaries of the health sector vary considerably between countries and different definitions have been developed for different purposes. In developing countries, the definition tends to be broader than in developed countries due to greater deficiencies in certain areas (e.g. environmental health) and extensive use of the traditional health sector. A useful rule of thumb is to include all finance/ expenditure whose primary intention (regardless of effect) is to improve health. 4.2 Definitions of financing: raising revenue to pay for a good or services. Function of a health system concerned with the mobilization, accumulation and allocation of money to cover the health needs of the people, individually and collectively, in the health systems. The whole processes of health care finance involves: where the money came from How it was collected Pooled Redistributed to the third party payers Finally used to pay the

providers for their services 4.3 Factors influencing health care Financing Introduction to Health Economics 157 The form and level of health care financing are now major policy issues for most developing countries and it is essential that decision makers have a clear understanding of the implication of alternative approaches to financing health care. There is an increasing interest in how health services are funded, both in industrialized and developing countries. The following factors, among others, influence the health services sector and should be given due attention in health care financing. 1. Demographic changes These have major effects on health care provision; firstly demographic change may lead to variations in the health coverage of the population. Rapid population growth rates can cause tremendous strains on the provision of social services including health care. Secondly, the age structure of the population has an important significance to the provision of health care. There are higher health service unit costs associated with the young and the old. The antenatal, obstetric and under five age groups are all relatively heavy users of health care, as are the elderly with their higher incidence rate of chronic illness. Third, demographic factor relates to the relationship between economic producers and dependants of a country. High dependent ratio means an increased burden on the productive population for providing health care. Introduction to Health Economics 158 2. Economic recession This can be expressed by low or even negative growth rates, increasing debt burdens and high inflation rates. This has severe implications for the ability of governments to maintain, let alone expand, expenditure on health care. Such effects on the supply of health care are exacerbated by the increased need for health care brought about by the recession itself through the links between poverty and ill health. 3. Rising expectation Expectation of health care consumers specially, the middle classes, to receive high-technology medical care similar to that available in the industrialized world. 4. Concerns about equity Governments committed to the principles of primary health care have a major responsibility to improve levels and depths of coverage. The concerns for equity may influence the choice and system of financing health care. To extend and improve basic health care at a time when there is such strong middle class pressure may only be available by providing substantial additional resources to the health sector. 5. Disease-pattern changes Disease-pattern change may result due to changes in average income levels or due to changes in social development. Thus, Introduction to Health Economics 159 as standards of living rise and morbidity patterns change, these changes are likely to have an effect on health care financing. In addition to shifts in disease patterns, the advances of medical technology have led to the possibility of treatment for health problems previously accepted as untreatable. This again places further pressures on health-care providers. 6. Efficiency Given the limited resources available for health in developing countries, it is essential to taste and use resources as efficiently as possible. 7. Displacement effects Rather than generating additional resources for the health sector, new or expanded financing mechanisms may merely displace funding from other sources. Displacement is not necessarily an undesirable consequence if the new or expanded source of finance is more efficient or more equitable than the one it partially displaces. Examples of displacement effects include foreign assistance which may displace government support for health care; counter-funding often a precondition for foreign assistance, which may divert funds away from existing priority projects; Introduction to Health Economics 160 health insurance schemes, which may in some instances displace earth than additional to the total of resources being allocated to health care (e.g. displacing direct payments); charitable contributions which may be withdrawn when other sources are developed; and government allocations which may be reduced when other sources of finance (such as user fees) are developed. 8. Wider effects of the health sector Health sectors may account for a sizeable share

of national resources and are often major employers. Consequently, the activities of the health sector may have spill-over effects on the economy as a whole. These include external effects on costs (e.g. inflation through the repercussions of high increases in stag pay); foreign exchange problems through heavy foreign borrowing for development projects or for development project or for payments for imports such as pharmaceutical or equipment opportunity costs such as the attraction of scarce manpower into the health sector at the expense of other professions, and disincentives to investment and employment (e.g. as a result of financing health services through high taxes on certain economic activities, enterprises or sectors). These external effects may also be positive as in the case or improved productivity resulting from reduced death and disability in the work force. Introduction to Health Economics 161 4.4. Criteria for choosing a Financing system In selecting a system of financing health care some criteria should be used. The first three criteria outlined below are general, while the last two have particular importance within the context of primary health care: a. Viability and ease of using the system This implies bureaucratic and cost simplicity, social acceptability ad technical feasibility b. Revenue generating ability Net revenue minus earning ability = Revenue minus operating costs. The administration of user-changes for example, may include the costs of billing, accounting and the safe storage and collection of funds. Even where additional staff is not employed and existing staff are used, it implies an opportunity cost to the health service in terms of alternative activities which the staff could have been engaged in had they not been involved in the revenue generating scheme. c. Effects on service – provision Systems of financing, for example which involve three parties – the patient the provider and an insurance company – may lead to over-provision of certain services d. Effects on equity That is equal access to care for those in equal need. Introduction to Health Economics 162 e. Participation in decision-making This is a concept that stresses community participation which creates an opportunity for a direct relationship between the consumer and the provider; an example of a financing system suitable of such participation is user charges. 4.5 Sources of National Health care Financing systems Health care and Financing is thus, a broad term used to define alternative arrangements for paying, allocating, organizing and managing health resources. It includes: ♦ Defining a level/ quality of care preferably a minimum basic health services packages to be provided, in an accessible and equitable manner. ♦ Identifying different modalities of financing to establish a financially sustainable system. ♦ Institute different mechanisms for mobilizing funds and rationalizing the use of available resources including cost and risk –sharing mechanisms/ insurances plans. Strategies The financing mechanisms envisaged are grouped into broad and complementary strategies. It includes improving government health sectors
1 efficiency, generating additional Introduction to Health Economics 163 and new sources of revenue, encouraging privates and non governmental organizations participations, development of social and private health insurance, promotion of community participation, encouraging bilateral and multilateral agencies participation, alternate financing options for the urban areas like Addis Ababa and organizational mechanisms for implementation of the health care and financing strategies. National Health care financing systems has Plurastic nature in funding: therefore, it has different sources of health care funding 1. public sources: ϖ Direct government budgeting ϖ National health services and public services health systems ϖ Social health insurances sponsored or mandated by the government ϖ Community financing 2. Private sources Direct payment by households Private voluntary health insurance Employers based health insurances Payments by community and other local organizations 2. External financing Introduction to Health Economics 164 ¬ Foreign aid or development loans 4.5.1 Government financing 4.5.1.1 Public and quasi public sources of finance A. General tax revenues General tax revenue is used in almost every country of the

world to finance certain components of health care and, in developing countries; it is often the most important source of financing. However, low tax ratios (the proportion of national income collected as tax) in these countries mean that it is often insufficient by itself to support health care. Although tax ratios tend to increase in line with development, this depends in larger part on a country's political will to increase the tax burden. In developing countries general tax revenue is composed largely of duties on imports and exports and sales taxes. Taxes on business transactions, profits and incomes are all of lesser importance. General tax revenue is currently not the most reliable source of finance for the health sector in developing countries. This results from factors such as the low political priority frequently given to the health sector in national budget decisions; the instability of government finance in countries heavily dependent upon taxes on imports and exports; the frequent Introduction to Health Economics 165 use of public expenditure as a tool of macro-economic policy; and frequent disparities between budgeted funds and their actual availability or disbursement. The net yield is usually high unless bureaucratic overheads are high. The equity impact of tax systems is dependent on both the proportional burden of taxation and on the use which is made of the revenue raised. Tax systems can be progressive, falling more heavily on the rich than the poor and, therefore, equitable; but they may also be regressive falling more heavily on the poor than the rich, and inequitable. Developing countries are assumed to have regressive financing systems because they tend to rely on indirect taxation. But in practice their tax systems may be progressive because the poorest sections of society fall outside the formal economy and indirect taxes may be levied primarily on luxury items consumed predominantly by the wealthier population groups. Available evidence on the burden of taxation is in adequate to permit often used inequitably in health systems. Health systems are comminuted by high-technology urban-based care and so the rural populations (and the urban poor) have inadequate access to any form of care. There is a limit to what can be collected in tax revenue and how much can be allocated to the health sector without conflict with wider primary health care objectives. Taxes that Introduction to Health Economics 166 make the poor poorer could seriously damage their health status and undermine their productivity; there are also many other fields of socioeconomic development that compete with the health sector for funds and yet give substantial support to primary health care (e.g. agriculture). B. Deficit Financing General tax revenue may be supplemented by deficit financing that is the decision to borrow and spend funds in the present and repay them over some period of time. Deficit finance may be raised nationally or internationally, through mechanisms such as the issuing or certificates or long-term low-interest loans. The cost enjoying the use of those funds in the present rather than the future is the interest that needs to be paid on the loan. In developing countries high inflation rates (affecting the real of interest on loans) and lack of confidence in the government's abilities to honor eventual redemption of the bonds may make it difficult to use deficit financing as a source of support for health systems. When it is used, deficit financing is typically for specific construction projects (e.g. hospitals water and sewerage systems). Unless such projects deliver well their services or contribute directly to increased output that can be taxed to Introduction to Health Economics 167 service the debt, the deficit must be repaid from general tax revenue. Thus, the agency doing the deficit financing must be endowed with the authority to impose additional taxes or fees, or be given a claim on general tax revenue in order to service the debt. Deficit finance may also be raised from abroad in the form of bilateral or multilateral AID loans, typically given for a project life of between three and five years, and there by constituting only a short-term source of support. Although useful for many developing countries in helping to develop and expand health care infrastructure, foreign aid

is often limited to support import components. Patient’s reliance in deficit financing in the economy as a hole is now burdening many countries with excessive debt repayment problems. C. Earmarked Taxes Most tax revenues are paid into a national pool and then shared out between different areas of government expenditure. Some governments, however, may “ earmark” a particular tax for a particular purpose. For example, taxes on the sale of particular products may be earmarked for health services at either national or local level. The problem with such taxes is that they are often difficult to administer, may be politically unpopular and are also often unpopular with tax administrators because they limit their freedom of action. They Introduction to Health Economics 168 can be regressive if, as often the cases, taxes are levied on items such as beer, cigarettes, recreational events, or foodstuffs; but they can be progressive if they are imposed on luxury, products purchased primarily by the more influent sections of society. A clear advantage of this source of finance is that a tax is visibly assigned to priority funding of certain activities or programs. Although not a major source of health sector finance in most countries, they may constitute an important source of finance for specific projects or programs. D. Social Insurance Social insurance can finance health care, as well as other needs such as invalidity and old age support, for either the whole population or a part of it. It is conventionally financed by imposing mandatory insurance payments on employed workers as a percentage of their wages, and by imposing a similar or some what higher payroll tax on their employers. In order to include those workers outside the modern employment sector insurance payments may also be calculated on measured income or wealth other than wages, such as the value of crops produced. Allowance will then have to be made for the fact that cash income is only available seasonally, when crops are sold. In their capacity as employers, governments may either run their own social Introduction to Health Economics 169 insurance scheme or contract such schemes from private insurance companies. The total financial contribution to social insurance schemes is (it, theory) determined actuarially on the basis of the incidence of illness, the conditions of eligibility for benefit, and the value of those benefits. Individual contributions are not determined, however, on the basis of expected risks or claims, but in some proportion to income. As risks are pooled, there is an unequal benefit distribution in favor of high-risk (high-need) workers. The main problems of social insurance are related to issues of equity and efficiency. It is easiest to cover those in regular employment, who may be as little as little as 5 to 15% of the population in developing countries; and there are often marked inequalities in the quantity and quality of services available to those covered by insurance relative to those quantity and quality of services available to those covered by insurance relative to those who are not overall, it is argued that social insurance 1 reinforces the maldistribution of resources between rural and urban areas in developing countries. It provides extra funds for largely urban, employed workers and leaves the large rural population and the informally employed urban population even further handicapped than before its introduction. Critics of social insurance also argue that it undermines both public and Introduction to Health Economics 170 private health care by competing with these sectors for limited supplies of real medical resources (E.g. personnel). Finally it tends to promote or reinforce high-cost, hospital-based, doctor-centered, curative care: E. Lotteries and Betting These may be used as sources of earmarked income for health and social services in developing countries. Often administrated by quasi-public bodies under national or local government regulation, these typically non-profit schemes rarely constitute an important component of overall health sector finance. Largely supported by the incomes of the poor and thereby constituting a form of regressive taxation, they typically have low net yields because of the payment of prizes and high administrative costs. The typical net yield from lotteries is between 10-30% of gross receipts. 4.5.1.2 Private Financing Private

financing for health care can be direct or indirect: A. Direct payment: This is personal payments made directly to a wide range of providers, including private practitioners, traditional healers and private pharmacists. User fees, whether for government-provided or for privately provided health services, are an out-of-pocket payment and are therefore considered here as health finance from a private source. Similarly, charges to Introduction to Health Economics 171 contributions or prepayments by members of community financing schemes are also considered as coming from private (non-government) sources. B. Indirect payment: This is payments for health care services by employers (e.g. payment by large and privately owned industrial complexes in developing countries or sharing of health care costs by employers in industrialized countries) and health financing by other non-government bodies such as local charity fund-raising for health causes. 4.5.2 . Health Insurance 4.5.2.1 Private Health Insurance Private health insurance differs from social insurance in two main ways. First, private health insurance typically does not include pensions for invalidity or old age. Second, the price (or' premium') charged for private health insurance is not based on the pooled risks of a large population, but on personal risk characteristics and the likelihood of illness in the individual or group covered. As a result, premiums are likely to vary for different individuals or groups. Schemes may be profit or non-profit making and may be organized for individuals or groups, the letter often benefiting from lower premiums (resulting from lower per capita administration costs as well as a degree of risk-sharing). In Introduction to Health Economics 172 many countries the larger employers act as an organizing body for health insurance, and may pay part of the premium as a fringe benefit. However, in order to control the level of utilization of services, individuals are often required to pay for part of the cost of medical care on a direct fee-for-service basis. In countries where demand is sufficiently high, commercial insurance companies may be active. Private insurance is not subject to the political allocation process and may channel extra funds into the health sector. However, it suffers from problems of two coverages because of its cost and the exclusion of bad risks, or enhancing inequity and promoting the growth of high-technology health care, inappropriate to developing countries. 4.5.2.2. Employer-Financed schemes In some instances employers may directly finance health care for their employees. They may, for instance, pay for private sector health services, employ medical personnel directly, or provide necessary facilities and equipment. Oil companies, mining and mineral industries, and large-scale export-centered agricultural enterprises usually provide for the health needs of their workforce. Benefits are seldom extended to families as employers are primarily concerned with maintaining the productivity of the work force. In developed countries the primary focus is on accident prevention and occupational Introduction to Health Economics 173 health, and in developing countries also, employers may have a legal obligation to provide first aid or occupational health services (e.g. sugar and coffee plantations in Latin America, tea and rubber estates in Asia and Cocoa farms and mines in Africa). Problems with employer-financed schemes relate to the quality of care provided, the possible fragmentation of services, difficulties enforcing employer liabilities, and the fact that viability depends upon the performance of the employing agency. Nowhere is employer finance a predominant source of support for health, although employer schemes are often a precursor to national social insurance schemes. 4.5.2.3 Charity and voluntary contributions It can take the form of financial support or in-kind donations (e.g. personal services, physical facilities, equipment and supplies), and may originate from business enterprises, wealthy families, religious organizations or private individuals. Often these resources are channeled through foundations or religious bodies. The problem with this source of finance are often indirect for example, donors may have different priorities from the recipient nation and may not

recognize their most urgent health needs. May prefer to fiancé visible evidence of their Introduction to Health Economics 174 support such as physical facilities and equipment and there by commit the recipient country or contributions may also take the place of, or reduce, other sources of finance. For example, contributions may be eligible for tax relief, reducing general tax revenues for use elsewhere (although the effects in this instance are likely to be minor). Charitable contributions have played an important role in health services provision in the past, and in some African countries and are still major sources of health care finance, channeled through religious agencies. The general trend, however, is for governments to support or take over mission health services. Thus, the role of charitable and voluntary contributions is decreasing, although it may still be important in times of emergency or disaster and can be a useful supplement to other forms of health finance. 4.5.2.4 Community financing and self-help Current primary health care initiatives in developing countries stress the importance of national self-reliance and community participation in health care delivery. By mobilizing underutilized national and local resources (e.g. organizational skills, manpower and cash) and by developing affordable and culturally appropriate delivery systems, it is hoped that basic health care will become universally accessible. Consequently, some governments and many non-governmental agencies are Introduction to Health Economics 175 turning to communities for organization, participation and financial support and communal self-help is increasing though of as an important source of financial support for health services in developing counties. The challenge is to develop new types of local institutions that can coordinate and for health services in developing countries systematically utilize the community resources. Self-help can take many forms such as labor, local insurance support for volunteer health workers, and drug cooperatives. 4.5.2.5 Direct household expenditure Household income is ultimately the source of most health care finance, but direct expenditure constitutes a specific category of financing that should be considered separately. Included in this category are any payments a consumer may make directly to health care providers such as fees for services, or prices paid for goods and supplies. Direct household expenditure is not independent of other sources of finance. Government services may charge user fees (often nominal) for certain services. Even with insurance coverage, there is often a requirement for some degree of copayment, which tends to increase the amount that would otherwise have been spent on health. Health insurance benefits, moreover, may have an upper ceiling, with household requirements in excess of this level. Introduction to Health Economics 176 The extent to which these payments represent a real ability and willingness to pay for health care is, however, unclear. Willingness to pay does not necessarily reflect ability to pay. Current levels of household expenditure partly result from the existing pattern of government health care provision, and the limited access to free/cheap government health care (particularly in rural areas). People may use and buy nongovernment (e.g. mission, private, traditional) health care partly because they have no cheap or good quality government alternative. Low-income groups tend to delay use of health services until illness is severe, presumably in part to avoid payment, but such delay generally only increases the necessary expenditure. High health care bills may sufficiently undermine their economic position to push them further into poverty. Health care payments also sometimes displace expenditure for other basic necessities of life (e.g. food), because there is only limited ability to pay for the range of household needs. Utilization of, and payment for health services is, moreover, likely to depend heavily on the perception of their relevance to a specific health need and the extent to which they provide a service that people value. Use of traditional healers for example, may reflect a belief in the relevance of their treatments for certain diseases rather than a general Introduction to Health Economics 177 willingness to pay for any type of health care. Perceptions

of poor quality in government services certainly undermine their use and therefore, willingness to pay for them. Private services may be more oriented to the preferences and circumstances of households, for instance providing for pay. Raising the level of direct household expenditure for health care, for example, by user fees, will clearly have a negative impact on equity (by influencing both the distribution of the payment burden and the benefited failed). It may be mitigated by the introduction of an exemption mechanism for the poor, although such a mechanism may itself reduce the demand for health care made by low-income groups because they may not wish to be identified as “poor” Moreover, such willingness to pay as exists is attached primarily to curative services, and so can only extend the provision of preventive care if it is possible to re-allocate resources within the health sector. Finally, the potential yield from user fees is unclear. It is dependent on the level and type of fees, the bureaucratic structure required to implement them, the existence of exemption mechanisms, and the impact of fee systems on the demand for care and the rates of collection. The administrative difficulties of implementing a fee system (e.g. how is ability to pay assessed? Who assesses it? Who collects the fees? How is abuse of the system restricted?) Introduction to Health Economics 178 Many cause less revenue to be collected than theoretically is possible. Resource shortages in developing country health systems clearly must be addressed, but the introduction of new financing systems is not an appropriate initial response to the problem. Shortages result both from inefficiencies in resource use and from absolute deficiencies, and until the first are adequately addressed, any additional resources will also be used inefficiently It is also important to recognize that health financing problems are not simply health sector problems, but often reflect economy-wide difficulties. They certainly require national strategies to address them, even where additional resources are to be recruited by actions within the health sector. For example, there must be national agreement that extra finance will be retained for use within the sector(rather than being matched by budget cuts or transferred to other sectors) and the resources can be re-allocated within the sector to meet priority health needs, in order to justify alternative financing strategies. Within the health sector, the first priority must be to stand of the sector nationwide. Management can be strengthened through staff training and the development of appropriate tools (including incentives), efforts can be made to understand the community’s needs in order that health care Introduction to Health Economics 179 better meets them, and resources can be allocated more appropriately (e.g. to preventive rather than curative care). At the same time, the options for increasing funds can be considered-using appropriate evaluation criteria. If efficiency improvements together with the possibility of additional resources still do not bridge the gap between resource requirements and resource availability, then health sector goals must be reconsidered. No everything that may have a positive impact on health can be afforded and health plans must be based on a realistic view of resource availability 4.6 Health Insurance Insurance provides the means by which risks or uncertain events are shared between many people. Premiums are paid to an insurance institution which compensates any insured victim of the event for any financial loss resulting from the event. Insurance therefore, helps to lessen and spread risks, and it relies on the fact that what is unpredictable for an individual is highly predictable for a large number of individuals. It follows that for insurance to be feasible, there must be enough individuals insured to spread the risks widely, and the uncertain events must be relatively independent of each other. That is, the principle is one of insurance based on probabilities, not one of prepayment for known future events; though in practice, a prepayment element for health care Introduction to Health Economics 180 exists since certain types of utilization are highly predictable. For a health insurance scheme to be cost covering, the level of its premiums needs to be

related to the statistical frequency with which the population covered requires care, and to the average cost of claims, plus an allowance for administrative costs and a profit margin (for commercial institutions). Insurance inevitably has redistributive consequences, their nature and magnitude depending on the financing of the schemes and the way in which premiums are assessed. Because the occurrence of the event being insured against is uncertain, some participants will draw out more than they pay in thus resulting in redistribution from the healthy to the sick. Other distributive effects will depend, as discussed below, on whether the insurance is organized privately or through collective mechanisms, and on the method of distributing the costs over the population. Health insurance can be financed and organized in a variety of different ways. It can be purchased by an individual or group through the private market, from either profit or non-profit firms, and under these circumstances is conventionally termed private or voluntary health insurance. Health care itself would usually be delivered by independent providers, but sometimes by facilities owned by the insurer. Introduction to Health Economics 181 In the case of private or voluntary health insurance, the level of an individual's premium would be based on the actuariallydetermined likelihood of illness of that individual. In contrast, group insurance is often based on a firm or co-operative and the premiums related to the risk of the group of employees in to, not of individuals. All subscribers will pay similar premiums (Except for adjustments for the size of family covered), and such insurance may well be made compulsory by the firm to prevent low risk or high income employees opting out. In some countries (for instance the united states and Australia) there are examples of the imposition of community rating' on private insurers; that is, within a given geographical area, premiums are not permitted to vary according to health risk or occupation (Fedstein 1979;scotton 1974). Premiums are often paid at least in part by employers, health insurance being considered a fringe benefit, though labour legislation making it compulsory for employers to provide their workers with some form of medical care is increasingly being introduced in developing countries (WHO 1978). An individual's demand for private health insurance will be determined by factors such as the price of insurance, that is the premiums to be paid the individual's assessment of the probability of loss(especially financial) resulting from illness; the likely magnitude of that loss; his income; and most especially. The degree to which one is risk averse (Feldstein Introduction to Health Economics 182 1979). Considerable attention has been given to whether or not a private market in health insurance would necessarily lead to the optimal amount of insurance, or whether there would be people who are either over-insured (for instance because the opportunity cost of the insurance has been reduced by employer contribution or tax-offset arrangements) or under-insured (for instance, because policies are not offered to low income group or high risks) Maynard 1979b). In any case, a section of the population will lack either the purchasing power or the will to obtain the amount of cover society considers they ought to have, and thus would not be adequately protected under a private market system of insurance unless they are given special assistance. Health insurance organized by the state or by a public body is usually termed as social insurance, social security, or sometimes compulsory health insurance. Social insurance schemes usually incorporate income maintenance measures as well, are compulsory for all individuals falling within the schemes and are seen as a source of not only individual, but also community welfare. The conventional funding source for social insurance consist of payroll taxes levied on workers and employers, often supplemented by user fees and by government contributions from tax revenues. If the scheme is self-financing, the total contributions collected should be actuarially determined on the basis of the probability of the Introduction to Health Economics 183 events insured against occurring, but contributions from workers and employers can be either, flat rate, or earnings related (usually within certain prescribed limits).

Some countries have a single social insurance fund; others have multiple sickness funds, often organized on a firm or industry basis. It is important to note that state involvement in health care financing, through the regulation private insurance or the organization of social insurance, does not of itself demand state involvement in the provision of care. Thus, it is important to distinguish between systems providing health services and systems paying for health services which are provided by commercial, voluntary, or non-profit agencies, institutions, but not the insurance arrangements, or insurance, but not the institutions; or it may do neither, but merely provide a framework of rules and regulations within which health insurance and provider agencies operate. In the organization of insurance-based health services, a distinction is commonly drawn between the 'direct' and 'indirect' pattern (Roemer 1969). In the direct pattern, an insurance agency provides health services in its own institutions, usually employing salaried medical personnel. This is the pattern that has developed in many Latin American countries. In the indirect pattern (prevalent in the United States and Europe, but also in some developing countries), Introduction to Health Economics 184 the insuring agency meets the costs of care given by private health care providers practicing from facilities not owned by the insurer. Such an insurance system is referred to as a 'third party' payment system, since the insurance agency, as the third party' has no direct authority over the other two parties, the provider and the consumer. A variant of this pattern is possible, where the insurer contracts with publicly provided facilities to care for the insured. Social insurance has been expanded and adapted, especially in Western Europe to the extent that the distinction between a 'national health insurance system' and a 'national health service system ' is a narrow one. The payments by employees and employers can be considered not as insurance premiums, but as an earmarked tax, and government contribution to the insurance fund are often sizeable. Indeed, if both systems provide care at not direct charge, their economic effect on consumer demand can be argued to be similar. However, national health insurance usually attempts to maintain a financially viable and actuarially sound system so that contributions are directly related to the cost of medical care. In addition, access to health care depends on the payment of contributions, registration with a general practitioner), and the only limit to access is the capacity of health facilities (Krizay and Wilson 1974). Finally, health insurance may finance certain benefits only (for instanc,e hospital inpatient services) Introduction to Health Economics 185 whereas, a national health service commonly gives access to all publicly –provided services. A major difference between the British National Health SDervice and the Western European health insurance-based systems stems from the integration of the financing and provider functions in Britain. However, if social insurance systems of the direct form, common in many developing countries, were eventually to be expanded to cover the great majority of the population, then they would become equivalent to national health service systems, though financed by an earmarked tax rather than general government revenues. It follows that the use of the term 'insurance' is to some extent misleading, since both systems of financing do provide insurance against the cost of health care. Ultimately, therefore, the only distinction to be drawn between national health insurance, as conventionally financed through payroll taxes, and a national health service, is that they raise money by different methods. Health insurance schemes are already widespread in the developing world. A review some years ago showed that more than half of all low middle income developing countries have some form of medical insurance as part of their social security system (Zschock 1982). They include all Latin American countries and a number of African and Asian countries. Introduction to Health Economics 186 However, only in a few Latin American countries do contributions constitute a significant proportion of total medical care expenditures. Moreover, health insurance

typically covers a small proportion of the population, usually the higher wage earners in the modern sector of the economy. Insurance systems in developing countries have therefore, catered mainly for the urban elite. Such characteristics have contributed to considerable controversy on the desirability of social insurance systems of medical care in developing countries, on their impact on the health services received by other sectors of society, and on their impact on the health of the whole population. The protagonists of social insurance argue that it taps money which otherwise would not be spent on health care; provides a stable source of revenue for the health sector; does not reduce the funds available for Ministry of Health services; improves the health of those workers most vital for a country's growth; and when it provides its own facilities, uses funds more efficiently than the private sector which might grow rapidly in the absence of insurance (Roemer 1971). Opponents argue that insurance systems are inequitable in practice: they benefit a small elite, but impose costs on the rest of society because they absorb scarce staff, promote curative, high-cost care and inappropriate medical education, Introduction to Health Economics 187 and are often subsidized by taxes which may weigh most heavily on the poorer sections of the population (Abel-smith 1978). Health insurance has thus, been criticized as representing a western model whose transfer to the developing world is inappropriate. It is certainly true that health insurance has been and still is an important source of finance in developed countries, and for that reason is worthy of scrutiny to see whether useful lessons can be learnt from their experience. The developed nations are exceptional in having a very extensive, privately organized (though often non-profit making) health system based on private insurance. Most European countries. Such as France, Germany, and the Netherlands have almost total social insurance coverage, though with considerable government regulation and financial support for the premiums of the elderly, unemployed, and indigent (Blanpain 1978). Only in a few countries, such as the United Kingdom and Sweden and more recently Italy and Denmark, has the insurance principle been largely abandoned in favor of a national health service funded from general tax revenues. Yet seven in the United Kingdom, traditionally seen as the birth place of a 'socialized' health system there has been renewed interest of late in private insurance as a means of increasing the resources available for health care, thus reviving the controversy on the Introduction to Health Economics 188 merits of insurance systems (Maynard 1979b; Abel-Smith 1981; Torrens 1982). 4.6.1 The Economic Implications of Health Insurance The introduction of health insurance in either its private or social form into a developing country is likely to carry with it certain implications for the efficiency and equity of the health care system. This section attempts to analyze some of these implications, in order to reach an understanding on the likely behavior of different institutional forms of health 1 insurance. This analysis necessarily demands exploration of whether health care possesses characteristics that distinguish it from goods and services normally produced and purchased in private markets, and whether health insurance has certain characteristics that distinguish it from other forms of insurance. The arguments relate essentially to uncertainty on the part of the individual on the type and quantity of health care needed; to the respective roles of consumer and provider in determining access to and consumption of health care; and to the role of equity considerations in influencing who should receive care and who should pay for it. Uncertainty The attraction of health insurance to an individual is that premiums are paid regularly in order that payments and Introduction to Health Economics 189 potentially large financial losses should be avoided at the time of illness. But will the removal of direct payments lead individuals to demand more care than they would otherwise, for instance by indulging in more health damaging activities, by visiting health facilities more frequently, of by consuming more care once they have decided to attend the clinic, pharmacy, or hospital? These possibilities might appear implausible to those who consider that an

individual's need for health care is clear and unambiguous. Yet, this notion makes economists uneasy unless it is stated clearly who determines need. Economists prefer in the first instance to talk not about need, but about demand, defined as the quantity of a commodity consumers wish and are able to buy at a given price (Lee 1979). This definition goes beyond the common notion of 'desire' or 'need', for unless desire is made effective by both ability and willingness to pay, it is not demand in the economic sense. The above paragraphs have described what the insurance industry calls moral hazard that is the tendency of individuals, once insured, to venue in such a way as to increase the likely hood or size of the risk against which they have insured. From an individual's point of view such behaviour may be highly rational; indeed he may value insurance precisely because he does not wish to be faced with problems over ability or Introduction to Health Economics 190 willingness to pay when he is ill (Brown 1981). However, from the insurer's point of views, such behaviour may lead to a larger quantity of care being consumed, and thus to higher costs which require higher premiums. In a developing country where only a small proportion of the population receive the benefits of health insurance, such a process can accentuate the already glaring differences that exist in the amount of health care received by different sections of the population There are well-developed methods used by the insurance industry to combat moral hazard. These include 'coinsurance', making the insured pay a proportion of his medical costs deductibles' making the insured liable for the initial expenses up to the stated sum; and fixed indemnity', where and individual is insured for a given expenditure., usually for an illness or a year, but occasionally over his lifetime (Brandt, Horisberger, and von wartburg 1980). Co-insurance is widely used in both developed and developing countries. In developing countries its purpose may be not only to limit demand, but also to make an insurance scheme financially viable when incomes are low. Considerable debate has taken place, especially in the United States, on the impact of costsharing upon health care utilization and on its efficiency and equity implications. There is evidence that the lower the costsharing rate, the larger will be demand; at the same time, there are fears that cost-sharing may deter those in 'need', Introduction to Health Economics 191 and discourage early attendance, leading to more severe cases and greater expenditure on treatment later on (Mansinghka 1978; Maynard, 11979b; Newhouse 1981). Deductibles, as an alternative to co-insurance, can be particularly useful to the insurer if applied to those services (Such as drugs) which generate large volumes of small claims for reimbursement, and thus impose considerable administrative costs. This analysis of the responsiveness of demand to price changes also suggests that the scope of insurance benefits covered can affect the composition as well as the level of demand. For example, if health insurance provides benefits for in-patients care only demand will be biased away from outpatient care. Thus, insurance, by changing the relative prices that biased away from out-patient care. Thus, insurance, by changing the relative prices that consumer's face of different health services, can either unintentionally distort the pattern of demand, or it can provide a positive opportunity to shape the demand of cost-effective treatment patterns. Finally, the impact of moral hazard in an insurance financed system (or indeed a national health service) will depend not only on demand factors, but also on the availability of supply and the response of providers. In a third-party payment system, an increase in demand is likely in the short run only to Introduction to Health Economics 192 lead to a rise in prices, but in the long run to an increase in supply. If, however, providers can restrain the expansion of supply, and insuring agencies have limited influence on price, the result may be cost inflation. Where insuring agencies can control the supply of services (As in the 'direct' pattern, of in 'a prepayment' systems where a physician or hospital also acts as an insuring agency) moral hazard will be limited by supply

restrictions and rationing, though at the risk of consumer dissatisfaction. 4.7 Health insurance in developing countries This Chapter concentrates on three factors that are of particular importance when analyzing insurance systems: Coverage of the population; health care coverage; and institutional structures. Particular attention is also given to innovative forms of health insurance that might tackle the equity and efficiency shortcomings of many existing systems. 1. Coverage of the population Social insurance schemes are concentrated in the industrial sector of developing countries not least because wages and profits are high enough for compulsory levies to be paid, and the structure of wage employment makes collection of the levies feasible. That sector, however, typically employs only a small proportion of the country's labour force; through in addition government workers may also be covered by Introduction to Health Economics 193 insurance arrangements paid for by the government form its tax revenues, sometimes assisted by employee contributions. In Columbia, for example, the two insurance systems for private and public sector employees account for 50 percent of health sector expenditure, yet cover at most 25 percent of the population (Zschock 1979). A similar pattern is evident in other Latin American countries. While figures on health sector finance are generally very scanty, it is clear that social insurance systems control a large part of health service resources, some of which are paid in the form of government subsidies, while providing care to a small proportion of the total population. The extension of social insurance to rural or peri-urban areas faces many problems. The majority of the working population in developing countries are either self-employed or work for small enterprises in the agricultural, petty trade and service sectors. In the urban informal sector, wages are typically low and employment unstructured. In the agricultural sector, also incomes are often low, may be received in kind rather than cash and may be spread over a large number of economically inactive household members than in urban areas. When, as is often the case, small-case agricultural or industrial producers face prices set by the market which they cannot influence, they may be unable to pass on the cost of insurance to Introduction to Health Economics 194 consumers, and any payroll tax threaten their financial viability. Moreover, the per capita cost of the health care in rural areas are likely to be higher than in urban areas, requiring larger payments for the same level of services, and an administrative structure that can be used for the collection of contributions may not exist. There are, however, a number of ways in which either compulsory or voluntary insurance schemes could be set up to include rural populations (though not usually the informal urban sector) these schemes are usually dependent on breaking the link between insurance and payroll taxes. For instance, the contributions of self-employed farmers can be linked to the size of farm and type of crop (thus, avoiding the problem of 1 determining income directly) low interest loans can be given to assist the payment of contributions in those months when incomes are low or if crops are marketed by a co-operative, or a co-operative bank provides credit repaid (Mallett 1980) in Mexico, agricultural credit societies pay annual contributions for all their members (Savy 1978) and in Japan a rural health insurance scheme is financed through local household taxation and state subsidies (Higuchi 1974) of particular value since they simplify collection mechanisms are Introduction to Health Economics 195 taxes that are levied on communal or co-operative sources of income. Only in very prosperous areas are farmers likely to be able to afford payments that can finance both primary and secondary care. Two solutions are commonly proposed, the first is to rely on state subsidies to supplement household contributions and to make up for the absence of employers contributions; the second is to require cost sharing especially for secondary care. Cost- sharing is frequently expected in conventional social insurance schemes for instance, in the Philippines and Korea, but could be employed also in rural schemes as was the case in China. Indeed, the example of China before recent

reforms and the collapse of the commune system is worth exploring at some length, since it displayed a number of features relevant to expand coverage and has been described in detail by Hu (1981). The insurance covering rural communes entitled cooperative medical services covered around 70 percent of communes once a commune had decided to join the scheme members amounted to on average 1.5 percent of family disposable income and contributions were also paid from collective funds. A small fee was charged for each visit to the brigade health station and if a patient was referred to a country or city hospital by a barefoot doctor part of the hospital Introduction to Health Economics 196 fee (for instance 50 percent or a fixed sum) was reimbursed by the brigade health fund and a low interest loan sometimes provided to assist with payment of the balance (Wen and hays 1976) financial assistance was also provided by production team funds for the salaries of barefoot doctors and public health workers) and by state funds (mainly for capital expenditure on local hospitals and clinics). While conclusions on the success of such a system must be tentative in view of the lack of information on its actual operation and its dependence on co-operative production system the Chinese experience of rural insurance does suggest that such arrangements can be government sources for hospitals if substantial cost-sharing is expected for secondary care and if low-cost forms of care are provided. 2. Health care coverage An alternative approach to tailoring insurance schemes to suit resource availability is to limit the scope of benefits. The possibility of using the insurance principle to finance primary health care has appeared attractive to both national governments and international agencies who are becoming increasingly aware that achieving 100 percent coverage for primary health care demands substantial resources (cumper 1980). The traditional medical care, the only form of care at present available to many rural communities is usually paid for Introduction to Health Economics 197 on a fee-for-service basis suggesting that commuting such payments at least partially in to health insurance may be feasible where efficient organizations can be set up to handle the finance. The proceedings of a WHO/UNICEF Conference on the cost of primary health care (WHO/UNICEF 1980) indicate that a number of countries are experimenting with community-based insurance systems. Their success is likely to depend to a considerable extent on the existence of strong local organizations as in China in the form of workers council's co-operatives or farmers unions to control organize and manage the insurance system. It is apparent that if premiums are low enough for the majority of the population to afford them and if the services provided are geared to the income form premium not-for-profit insurance can be used to develop local services controlled by local organizations However, while adopting a scheme voluntarily it is likely that as in China membership of a local scheme may need to be compulsory in order that the border of risk to be spread and that low-risk or high-income individuals should not opt out. The problems will arise in the financing of more sophisticated services where government support is likely to be needed. In contrast to rural areas where low incomes are likely to limit the range of care that can be financed by insurance, urbanIntroduction to Health Economics 198 based social insurance schemes have been widely criticized for concentrating largely on curative in-patient care and neglecting less costly forms of curative care and preventive care. Clearly this is always likely to be the outcome where those insured insist upon sophisticated services when insurance agencies have little control over the quantity of services provided and when facilities are provided indirectly and can thus respond to this demand. A curative high-cost pattern of service can also result from insurance cover which is limited to the more expensive (usually hospital) services. 3. Institutional structures Some of the relative merits of indirect and direct systems of insurance have already been identified. From the economists perspective what is important is to determine which system is most

likely to produce health care efficiently. Roemer has argued strongly that not only does the direct pattern produce better quality care, but also that it does so more efficiently particularly in its use of paramedical and auxiliary staff (Roemer 1969). Moreover, the direct pattern avoids the problem faced by third-party insures of attempting to find a method of payment for doctor and hospitals that promotes efficient behavior. Whilst the salaries and hospital budgets usually favored by the direct pattern are not ideal particularly since salaries may not provide a sufficient incentive for high productivity they do at least facilitate cost control. In contrast, Introduction to Health Economics 199 reimbursement methods such as fee-for-service and fees per patient day do not encourage physicians or hospital managers to ration the quantity of services given to patients, in Brazil for example, a study showed that much of the variation in caesarian section rates in the maternity units of a number of hospitals were associated with the financial status of the patient rates where 75 percent of deliveries for private patients, 40 percent of deliveries for insured patients and less than 25 percent for indigent patients (Janowitz, Nakamura, Lins, Brown and Clapton 1982). While the merits of the direct pattern have frequently been emphasized, it is not with out defects. It is often organized as a separate enclave, quite distinct institutionally from the health care services of other agencies especially of the ministry of health for instance in Latin America in 15 out of 20 schemes responsibility for administrative supervision lay with the ministry of labor or of social welfare and in another three while the ministry of health exercised general supervision services where dactyl administered by social security institutions (Roemer 1973). Furthermore, many countries have multiple insurance systems, each system with its own services and catering for different groups of workers or even different government departments such structures tend to create access problems for those eligible for services and encourage the duplication of facilities. They may also have high Introduction to Health Economics 200 administrative costs since each scheme is relatively small and is therefore, unable to take advantage of economies of scale that can be enjoyed by large insurance agencies. The co-ordination or unification of separate funds and the linkage of insurance schemes etc is what is usually recommended by the Ministry of Health. Integration of health services for the insured with public health services should provide medical and allied services partly or wholly through existing facilities and personnel of the Ministry of Health strengthening these with subsidies for capital and recurrent expenditure. In Jordan civil servants receive care in public hospitals with out charge in return for a monthly salary dedication paid to the ministry of Health. This type of system is clearly quite difficult to set up when ministry of Health systems are inadequate though capital funds could be devoted to expanding existing services rather than setting up separate facilities for the insured. Yet, the 1 problem may remain that insured people expect by virtue of their payment contribution to receive a better standard of care than that available in Ministry of Health facilities. An important issue is whether their demands can be partially met by providing improved ward accommodation and fringe benefits, but without the provision of separate treatment and diagnostic facilities. Introduction to Health Economics 201 While it is possible to generalize about the advantage of these three pattern of organization,the direct and the joint ministry of Health/health insurance system a country’s choice of health insurance scheme will clearly depend on the existing pattern of services, their ownership and payment systems. Two major considerations are likely to be the presence or absence of a substantial private medical system and the adequacy of public health services. The possibilities open to countries with a different inheritance can be explored by taking the examples of Korea and Tunisia. In Korea, most physicians work on a private fee-for-service basis and the majority of hospital beds are privately owned and concentrated in urban areas (park and Yeon 1981), over 85 percent of health expenditure is financed by consumers and until 1977, when a

medical insurance programme set up Korea had no financial mechanisms for pooling risks (apart from a few pilot programmes)..By 1981, the medical insurance programme required firms with at lest a hundred workers, government officials, teachers and ancillary staff of private schools to be compulsorily insured and provided for a voluntary community-based programme for all others. Subsequent expansion of insurance cover has been rapid. The private pattern of health services has been retained, providers being remunerated according to a specified fee schedule. Recently, however, cost inflation has provided a Introduction to Health Economics 202 considerable problem deriving from the reliance on fee-forservice payment mechanisms to private providers. In Tunisia, it appears that reasonable public facilities were available when medical care coverage under social security was introduced. It was therefore, possible to arrange that in return for an annual subsidy paid to the ministry off Health by the social security agency care would be provided through the regular public hospitals and health services. Insured workers were not to receive preferential treatment, but were exempted from fees normally charged (WHO 1971) Generally, the experiences of insurance in the developed and developing world have been rather different. Western European health insurance organized by public organizations or not-for profit funds, has gradually expanded to near 100 percent coverage of the population, and finance the purchase of health care from largely private agencies. Only a few European countries have abandoned insurance in favor of funding from general tax revenues public ownership of facilities and salaried employees. In the United States, social insurance is confined to the poor and elderly private insurance agencies that cater for a large proportion of the population and health facilities are largely provided via the private market. Developing countries display many different patterns of Introduction to Health Economics 203 organization and health care provision in their social security schemes covering medical care. Many governments have taken a direct role in the financing and provision of a limited network of public health facilities and insurance has been used as the means to expand health care for regular wage earners in the public and private sectors, either by enabling them to obtain care from independent or public providers or by the direct provision of health care services. Most recently interest has grown in insurance as a way of financing primary health care largely though not necessarily exclusively in rural areas. The value of insurance as a principle of providing protection for the individual against the cost of illness is clear. Beyond that principle the value of an insurance system depends on its effect both as a source of funds and as a way of organizing the provision of health care. Its effect can be evaluated in terms of: 1) The distribution of the financing burden (costs) over the population and the extent to which insurance facilitates access to and utilization of health services (benefits) by different groups in the population: 2) The quantity and quality of the services it finances and the feasibility of extending coverage of such services to the whole population within a reasonable time period. Introduction to Health Economics 204 3) The efficiency of these services, that is the provision of care at least cost 4) The efficiency of heath insurance administration and 5) The extent to which health insurance assists the achievement of national policy objectives Insurance clearly can be used and indeed is used as a way of providing services to those in the modern sector of the economy. So long as the distributive effect of such care does not violate notions of equity and the health services for the insured do not detract from the care available for other section of the population, then social insurance can be instrumental in raising resource for the health sector and enabling certain groups to finance their health care needs themselves. Social insurance can also be used to ensure either that these resources are not channeled into a private health sector whose growth could cause even greater inequity and inefficiency of consumers are uniformed and providers unconstrained or that the use made of an

existing private sector and its behavior is directed towards meeting national objectives. Finally, the limited ability of many governments to increase taxation and the often low priority given to health expenditure in rural areas and for the urban poor, provide strong reasons for looking closely at the possibility of using voluntary insurance to develop local level, and in particular primary health services. Introduction to Health Economics 205 This is a system in which prospective consumers of care make payment to a third party in the form of an insurance scheme, which in the event of future illness will pay the provider of care for some or all of the expenses incurred. Health insurance is a mixed source of finance as it often draws contributions from both employers and employees and sometimes from government. Contributions to such schemes are often mandatory. Three principal types of insurance are distinguished here. a. Government or social insurance: These systems provide compulsory or, to a lesser extent, voluntary coverage for people employed in the formal sector. Premiums or contributions are generally based on the individual's income regardless of actuarial risk. b. Private insurance: This provides coverage for groups or individuals through third-party payer institutions operating in the private sector. Premiums tend to be based on an actuarial calculation of incidence of disease and the use of services i.e. they are generally not income-related and vary with age and sex. c. Employer-based insurance: This refers to coverage falling between the other two categories in which the employers or private bodies serve as the third-party payer or collection agent with eligibility based on Introduction to Health Economics 206 employment status. Such schemes are often required by national labour codes. In each of these categories health insurance has seen as a way of allowing governments to diversify the sources of revenue of the health sector, to improve efficiency by giving individuals some role in paying for their own health care and to spread the burden of health costs over time and across a wider population, all of which will reduce risk. The existence of risk is the fundamental rationale for insurance. Health care costs may be infrequent, but they are potentially very high; this means that, without insurance, individuals may be unable to pay for care even if they are willing to do so. Insurance markets suffer from market failures particularly those associated with imperfect information. These problems are often described as those of moral hazard (those who are insured will tend to overuse insured services) and adverse selection (those who anticipate needing health care will choose to buy insurance more often than others, which leads to higher costs, lower profits, higher premiums and ever fewer users in consequence). Frequently, these problems mean that there are no private insurance markets at all. When they do exist, they may be guilty of "cream skimming", for example, when the insurance excludes the riskier customers (on the basis of their income or previous health status) which undermines the value of insurance altogether. Such market Introduction to Health Economics 207 failures explain why governments tend to play a regulatory role in health insurance markets. Review Questions 1. Write down the factors that influence the choice of a financing system. 2. Describe the different systems of financing the health service sector. Introduction to Health Economics 208 3. Show how demographic conditions can affect the choice of health care financing systems. 4. Explain the difference between public and private goods. 5. Outline the problems of health insurance as a system of health care financing. 6. What are the drawbacks of private financing? 7. Discuss the weaknesses of government financing. 8. Are communities financing schemes applicable to Ethiopia? Bibliography 1. Able-smith, B.(1978) Poverty, development and health policy. 2. Bastos, M.V.(1971). Brazil's multiple social insurance programmes and their influence on medical care. Int.JHlth serv, 1,375-89. Introduction to Health Economics 209 3. Black, D. (1980) Inequalities in health: report of a research working group. Department of health and social security and social security, London. 4. Blanpain, J. (1978) National Health insurance and health resources. Harvard university press. 5.

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(1978.) Social security in agriculture. International Labour organization, Geneva. 37. Saward, E.W. and Fleming, S. (1980). Health maintenance organizations scient. Am. 243,37- Introduction to Health Economics 213 CHAPTER FIVE THE ROLE OF GOVERNMENT IN HEALTH Learning Objectives At the end of this chapter, the students will be able to: 1. Understand the role of government as affecting the resource allocation pattern in health & the extent to which it can influence the overall performance of the sector. 2. Analyze the possible measures that can be taken to alleviate the health problems of developing countries. 3. Appreciate the problems of health policy in developing countries. Introduction to Health Economics 214 5.1 Introduction In recent years health reform has shot up to the top of political agenda throughout the world. For developed industrial countries and many middle-income developing countries reasons include rapidly rising costs, the large number of people still not covered by health insurance and the fear of AIDS. For developing countries the main reason is a better understanding of the importance of health for improving the productivity of workers and of the potential for enormous gains in health at very low cost. There is no question that governments all over the world have played a vital role in bringing about the great advances in health over the past many years. Public health measures are responsible for eradicating smallpox and have been central to the reduction in deaths caused by other vaccine-preventable childhood diseases. Expanded and improved clinical care by government doctors and nurses has saved millions of lives from infectious diseases and injuries. Better prenatal and delivery services organized by governments have lowered the rate of serious complications of pregnancy and childbirth for millions of mothers. Despite these remarkable improvements, however, enormous health problems remain. Absolute levels of mortality in Introduction to Health Economics 215 developing countries are still unacceptably high; child mortality rates are about ten times higher than those in the established market economies. According to the World Bank Development Report in 1993 if death rates among children in poor countries were reduced to those prevailing in the rich countries, 11 million fewer children would die each year. Almost half of those preventable deaths are a result of diarrheal and respiratory illness exacerbated by malnutrition. In addition, every year seven million adults die of conditions that could be inexpensively prevented or cured; tuberculosis alone causes two million of these deaths. Over 400,000 women die from the direct complications of pregnancy and childbirth. Maternal mortality ratios are on average 30 times as high in developing countries as in high income countries. There are several major problems with the way health systems are now run and financed and if solutions are not found, the pace of progress in reducing the burden of premature mortality and disability will be slowed. 5.2 Problems of health policy The appropriate nature and extent of government involvement will
1 vary from country to country, in large part depending on income levels. Some of the common problems of most Introduction to Health Economics 216 countries in their policy are misallocation, inefficiency and cost allocation. A) Misallocation; one of the most important aspects of economics in making health policy is the appropriate allocation of material financial and human resources. This implies optimal disruption of economic resources among competing needs. This in turn calls for the proper identification of the need. Sometimes public money is spent on health interventions with low cost effectiveness such as foremost cancers, at the same time that critical and highly cost effective interventions such as treatment of tuberculosis and sexually transmitted diseases remain under funded. b) Inequity; the poor lack access to basic health service and receive low quality care. Government spending for health goes disproportionately to the affluent in the form of subsidies to sophisticated public tertiary care hospitals and to private hospitals. c) inefficiency; much of the money spent on health is wasted because brand name pharmaceuticals are purchased instead of generic drugs ,health workers are badly deployed and supervised and Hospital beds are under utilized .

Introduction to Health Economics 217 d) cost explosion; in some middle income developing countries health care expenditures are growing much faster than income as increasing number of specialists, the availability of new medical technologies and expanding health insurance linked with fee-for-service payments together generate a rapidly growing demand for costly tests, procedures and treatments. As developing and industrial countries alike rethink the best way to provide health care in the century ahead some argue that governments should step up their financing while allowing more participation by non-government organizations and the private sector in supplying services. 5.3 What can governments do? Based on the problems mentioned, it makes sense for governments to be involved. The poor cannot always afford the health care that would improve their productivity and well being. Some actions to promote health are pure public goods or care large positive spillover effects. Market failures in health insurance also mean government intervention can raise welfare by improving the way those markets function. Clearly, governments have a responsibility to spend wisely and to evaluate carefully exactly what form their involvement should take. The World Bank recommends four main policies Introduction to Health Economics 218 to overcome the existing weakness of health systems in developing countries. ϖ Governments should finance a nationally defined package of essential public health and clinical care, especially for the poor, and should ensure the widespread and efficient delivery of such a package. ϖ The public sector should devote far fewer resources or none at all, to financing health services outside of the essential package which are of lower costeffectiveness. ϖ Governments should promote such types of health insurance that not only achieve broad coverage of the population, but also build in payment mechanisms that control the cost of health services. ϖ Governments should encourage diversity and competition in the supply of health inputs, particularly drugs, supplies and equipment, as a means of improving quality and driving down costs. They should also foster a competitive private sector to provide the full range of health services including financial publicity. 5.3.1 A basic health package Government action in many areas of public health has already had an important payoff. The challenge now is to expand coverage of interventions with high cost-effectiveness: Introduction to Health Economics 219 school based health services information on family planning and nutrition programs to reduce tobacco and alcohol consumption Regulation, information, public investments to improve the household environment and AIDS prevention. At same time, governments should also put together a package of essential clinical services although this may vary from country to country, depending on local needs and the level of income. The World Bank Development Report (1993) has come out with a suggested minimum package of health services which is affordable by the majority of developing countries at current levels of health spending and would reduce the burden of disease by just over 30 percent in low income countries. Eleven clusters of interventions or individual interventions are included in the package, apart from being cost-effective these services address diseases responsible for a large share of the disease burden in developing countries. However, the exact content of each countries essential package will be largely determined by the epidemiology profile of the country (the distribution of disease burden across Introduction to Health Economics 220 diseases) and the cost effectiveness of the corresponding interventions. The size of the package (number of interventions cluster) will depend on the financial resources available for health care. Clustering interventions improve cost-effectiveness through at least three mechanisms: ♦ Synergism between treatments or prevention activities is common, particularly in pediatric care. ♦ Joint production costs can substantially reduce the amount of resources needed were interventions to be provided separately. ♦ The optimal use of specialized resources, such as hospital beds, requires a screening process

to refer the most severe cases from the first level of care to other facilities. An efficient health cluster should include interventions that can be given to the same individual, at the same time, and through the same mode of delivery (outreach community health worker, health center or hospital).The expanded program on immunizations, for example,is a very efficient one because it includes six vaccines provided through the same delivery system to the same individuals ,often at the same time hence, an essential health package approach is an important measure which governments can be encouraged to do. Introduction to Health Economics 221 5.3.2 Value for money When it comes to health policy, one of the most difficult decisions for developing nations to make how best to put together a mix of health services that will be financed by public spending. Ideally, they would like to offer as much health care as possible to as many people as possible. In practice, however, they end up concentrating resources in urban hospitals which provide a wide range of services for a few, leaving other population groups, particularly in rural areas ,with a relatively little access. This allocation of public spending is inequitable and inefficient. Costly treatments are prescribed that prolong life only slightly, while large populations are denied inexpensive services that extends life greatly, such as immunization. As a way-out of resolving this problem, the World Bank Development Report recommends that governments design and finance national health package embracing essential public health and clinical services that will substantially reduce the burden of disease (the present value of future streams of disability-free life lost as result of death, disease or injury) at affordable costs. This means that government will need to review the value of interventions they offer so that they can reallocate resources in the most costeffective manner. No matter how health services are organized and paid for, what they actually provide are health interventions. Debates Introduction to Health Economics 222 about whether health services should concentrate on “vulnerable groups” such as children, pregnant women and the elderly, or about the relative role of hospitals versus health centers, or about preventive versus curative activities are at bottom debates concerning the proper mixture of interventions. In health, as in every other sector, customers want value for the money spent. That is why the first step in designing a country’s essential health package is to determine the cost effectiveness of a health intervention- the net gain in health compared with doing nothing divided by the cost. Indeed, the developing countries that have been the most successful in improving health for a given level of spending have concentrated their public monies on highly cost effective interventions. 5.3.3. Redirecting public spending The World Bank Development Report pointed out the need for widespread and fundamental reform of health policies and health systems. It called for changes in the level and composition of government spending for health in public and private institutions
1 responsible for delivering health services and in insurance, cost recovery and mechanisms for financing health care. Introduction to Health Economics 223 Public financing of an essential clinical package can be justified because the package creates positive spillover effects and reduces poverty. However, the case for government financing of discretionary clinical health services outside of the essential national package is far less compelling. In fact, if governments reduced or eliminated public funding of these services they would actually increase in both efficiency and equity. One important way to direct government spending away from discretionary care is to recover costs in government hospitals especially from the wealthy and the insured. Even in lowincome countries such as Ethiopia, Kenya, Pakistan and the Philippines where insurance may account for less than 5 percent of total health spending, a combination of limited private insurance and the ability of upper income groups to pay makes feasible for governments to charge for discretionary care delivered in public hospitals. In middle – income countries, where insurance becomes more important, there is ever-greater potential for cost recovery. Governments should also phase out public subsidies to

insurance whish generally benefit the better-off. There are strong efficiency arguments for directing government funding to public health interventions because of the public good nature of these services and a number of the essential clinical Introduction to Health Economics 224 services including treatment to tuberculosis effects. In addition, there are equity grounds for financing the basic health package. The poor are disproportionately affected by the disease burden the package addresses. This means that making public financing of this package with universal government finance leads to public subsidies to the wealth, who can afford to pay for their own services, with the result that fewer government resources go to serve the poor. One way to solve this problem is by targeting public spending to the poor. In low-income countries, where current public spending for health is less that the cost of the minimum package, some targeting is almost inevitable. In countries where the wealthy do not use government financed services because of the greater quality and convenience of privately financed services, targeting may be fairly easy. The most sophisticated facility required to deliver the minimum elements of the package is a “district” hospital which serve as the first level of referral from health centers. These hospitals offer basic surgery, emergency services and some outpatient care. Generally, they can have 100-400 beds and serve 50,000-200,000 inhabitants, the minimum package requires access to health centers and district hospitals throughout the country. On average it requires about 1 district hospital bed, 0.1 to 0.2 physicians per 1,000 population and 2 to 4 nurses per physician. Introduction to Health Economics 225 Governments can direct public spending to support the nationally defined essential package in several ways: a) Where services are publicly financed and provided, government can reallocate public spending towards inputs-drugs, supplies equipment, staff and facilities that support the package. In many countries extending lower-level facilities are necessary steps to delivering the package. At the same time, governments can eliminate or greatly reduce financing of inputs for less cost-effective services. This might include losing wards or converting specialized hospital physicians. In Canada, for example, provincial governments, not individual hospitals, control the decision to acquire technically advanced diagnostic tools. At the same time, providers ‘treatment decisions would not be micromanaged; they would be influenced, instead, by the nature of input availability. The specialized staff and equipment for example, would be available for treating malaria in young children. Budgetary and salary incentives could also be used to reward individual providers, facilities or districts that achieved good coverage of the population with the services in the package. Introduction to Health Economics 226 b) Where services are publicly financed, but privately provided, governments should reimburse only for those services in the essential package. This model of health care delivery is growing. It is still uncommon, however, in developing countries. At present the regulatory capacity to oversee such arrangements is poorly developed. 5.3.4 Controlling costs Even where subsidies in discretionary clinical services for the better-off are cut or public insurance is universal and pays for a more comprehensive set of services in the national package, governments sill must cope with the problem of escalating health care costs. These costs can crowd-out spending on other sectors of the economy or raise the price of labour threatening a country’s international competitiveness. The sources of excess health costs are complex and much debated. Health services are labour intensive, and their productivity grows slowly compared to the other areas of he economy. In the United States higher levels of underlying morbidity and greater hospital amenities relative to the other industrial countries are part of the answer. But two types of inefficiencies are also important, high administrative costs and unnecessary use of an ever-expanding array of costly technologies of diagnostic tests and surgical procedures. Introduction to Health Economics 227 These inefficiencies appear to be closely

linked to two basic features of the US health system. Open-ended free-for all service compensation for health providers encourages the development of new equipment, drugs and procedures since neither providers nor patients have strong incentives to hold down utilization or spending. A complex system of multiple insurance institutions and other payers, each with its own procedures, raises administrative costs substantially. These findings concerning health costs escalation in industrialized countries are especially relevant for middleincome developing countries which are under pressure from medical professionals, manufactures and consumers to use new medical techniques. They face difficult policy choices related to provider compensation. One approach to controlling health costs is to pay a fixed amount for each person (capitation) as is now done by health maintenance organizations in the United States and by the British national health services. Another approach used in several industrial countries is to provide each hospital or network of physicians with a fixed total budget. In countries where there is an expanded insurance system insurers can also jointly negotiate uniform fees for physicians or they can set fixed payments for specified medical procedures. 5.3.5 Promoting competition Although governments have a fundamental responsibility for financing basic health services, they need not be responsible for delivering those services. Experience suggests that diversity and competition lead to better results. In a competitive system people seeking health services can choose from a variety of providers-public, private non-profit and private for-profit. As developing countries move towards such a system, they face a wide range of policy options as regards the impact of different providers (Public and private) in terms of allocative efficiency, technical efficiency and the potential to reach the poor. Non-governmental organizations (NGOs) provide a major share of health services in developing countries especially for low-income households in the poorest countries. Recent data from Africa suggested that the NGOs are often more efficient. Governments that have excluded NGOs or heavily restricted their operations have seen essential services dertiorating. Where such bans or barriers to NGO activity exist, they should be removed. Beyond this, there are opportunities for governments to form constructive partnerships with NGOs to deliver essential clinical services. Some governments in Africa, such as Tanzania and Lesotho, allow appropriately located religious mission hospitals to serve as district hospitals. They then make them responsible for a full range of public health and clinical services and for performing district wide functions such as the health planning, supervision of lower-level clinics and community activities as well as the maintenance of emergency transport. In return, the government pays some of the NGO costs. In Africa and Asia where traditional medicine remains an important part of the health care
1 system, governments could make greater use of traditional practitioners. Successful examples include the use of healers in Thailand to screen for malaria and distribute anti-malarial drugs, the promotion of modern contraceptives in Kenya and the distribution of condoms in Zimbabwe and Uganda. Traditional birth attendants have also been enlisted to improve pregnancy outcomes in Bangladesh. At the same time governments can improve the equity and efficiency of their own health programs and facilities thereby increasing their responsiveness to local needs through decentralization and the use of managerial incentives. Governments can also reap efficiency gains by converting public hospitals into semi-autonomous foundations or public enterprises. These foundations are less restricted by public sector procedures in managing their costs and collecting charitable donations for investments and operational costs. Government finance of public health and of a nationally defined package of essential clinical services would leave the remaining clinical services to be financed privately or by social insurance within the context of a policy framework established by the government. Governments

can promote diversity and competition in the provision of health and insurance by adopting policies that: • Encourage social or private insurance (with regulatory incentives for equitable access and cost containment) for clinical services outside the essential package. • Encourage suppliers (both public and private) to compete to deliver clinical services and provide input, such as drugs, to public and privately financed health services. Domestic suppliers should not be protected from international competition • Generate and disseminate information on provider performance, on essential equipment and drugs, on the costs and effectiveness of interventions and on the accreditation and status of institutions and providers. Increased scientific knowledge has accounted for much of the dramatic improvement in health that has occurred during the 20th century by providing information that forms the basis of household and government action and by under printing the development of preventive, curative and diagnostic technologies. Investment in continued scientific advances will amplify the effectiveness of each element of the suggested three-pronged approach. Introduction to Health Economics 231 5.3.6. Strengthening household capacity Within the household, health improvers rapidly as people escape poverty and get better education. Beyond the household, every society's health services are affected by its national income and its ability to acquire and apply new scientific knowledge which depends on the level of schooling. The role of income Life expectancy is believed to be strongly associated with income per capital (see the World Bank Development Report 1993). The higher a country's income per capital, the more likely its people are to live long, healthy lives. Income growth has more impact in poor populations because additional resources buy basic necessities, particular food and shelter that yield especially large health benefits. The relationship between income and life expectancy has improved over the course of the century as advances in science and medicine have made it increasingly possible to realize greater health for a given income. Because poverty has a powerful influence on health, it is not just income per capital that is relevant. The distribution of income and the number of people in poverty matter as well. In industrial countries life expectancy depends much more on Introduction to Health Economics 232 income distribution than on income per capital and it has been rising faster in countries with improving income distribution. In developing counties, the variation in the prevalence of poverty and per capital public spending on health goes a long way toward explaining differences in life expectancy. Moreover, the adverse effect of poverty on health can be seen in health differences across rich and poor neighborhoods and families, even within the same city. The strong link between income level and health highlights the costs to health of slow economic growth. The role of education Households with more education enjoy better health for both adults and children. A mother's schooling is a powerful determinant of child health. The advantages that a mother's schooling confers on her children's health are felt even before birth and they continue to operate throughout the childhood years. Better-educated mothers marry and start their families later diminishing the health risks of early childbearing. They also tend to practice better domestic hygiene and make more effective use of health services. In general, they are better at getting information on health and acting on it. Among adults, health depends strongly on personal habits and lifestyles. Since educated people tend to make choices that Introduction to Health Economics 233 are better for their health, there is a strong relation between schooling and health. In Brazil, adults with primary schooling or less are about five times as prone to high blood pressure as those with post-secondary schooling. Educated people are quick to modify their behavior as new health threats arise (such as AIDS) or in response to new information about health. In the United Kingdom, for example, the proportion of smokers among adults declined by 50 percent between 1958 and 1975 among

the most educated, but hardly changed among the least educated. Given these strong links between better health and income and education, the policy implications are clear; governments should work to boost economic growth, reduce poverty and expand schooling (especially for girls – one of the most effective ways of strengthening women's ability to care for their families). It is difficult to reduce poverty and thereby improve health status without economic growth, so establishing sound economic policies is one of he most valuable things a government can do. a. Health Policy of Ethiopia – an overview 5.4.1 The rational The Health Policy of Ethiopia is based on the primary health care approach which has health education, education in personal and environmental hygiene, nutrition, immunization Introduction to Health Economics 234 and family planning as standard components. The central thrust of the Health Policy includes plans to establish more than 500 new health centers to provide primary health care for the under-served rural population. It was estimated that, around 1990, only 46 percent or less of the population of Ethiopia lived within a reasonable distance from health facilities; reasonable distance being defined as a radius of 10 kilometers from where people live. The population/physician and population/nurses ratios were estimated at approximately 30,700 and 15,000 respectively. Daily calorie supply per capital was estimated at 76.0% of the recommended daily intake, only 18% of the rural and 78% of the urban population has access to safe water supply and only 5.3% use any form of latrines. Clearly, even in terms of the basic necessities of life, the Ethiopian population is severely under served and there is a long way to go in meeting these needs even in the most rudimentary manner. Community based health care programs and outreach services are still in their early stages. The expanded program of immunization (EPI), the establishment of which generated so much optimism, is said to suffer from serious setbacks in the late 1980s and early 1990s. Data for the period covering July to September 1992 indicates the following: a. BCG 19.0% Introduction to Health Economics 235 b. Measles 9.0% c. DPT – 3 12.0% d. Polio – 3 13.0% e. TT -2+ 7.0% Continuing shortages of basic drugs has stunted the development of a coherent community based approach to health care. 5.4.2 General policy This includes: a. Democratization and decentralization of the health services system b. Development of the preventive and promotive components of health care. c. Development of an equitable and acceptable standard of health service system that will reach all segments of the population within the limits of resources. d. Promoting and strengthening of inter - Sectoral activities. e. Promotion of attitudes and practices conducive to the strengthening of national self-reliance in health development by mobilizing and utilizing internal and external resources to their maximum. f. Assurance of accessibility of health care for all segments of the population. Introduction to Health Economics 236 g.
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Working closely with neighboring countries, regional and international organizations to share information and strengthen collaboration in all activities contributory to health development including the control of factors detrimental to health. h. Development of appropriate capacity building based on assessed needs. i. Provision of health care for the population on a scheme of payment according to ability with special assistance mechanisms for those who cannot afford to pay. j. Promotion of the participation of the private sector and non-governmental organizations in health care. 5.4.3 Priorities of the policy A. Information, Education and Communication (I.E.C) of health shall be given appropriate prominence to enhance health awareness and to propagate the important concepts and practices of self-responsibility in health. B. Emphasis shall be given to: - The control of communicable diseases, epidemics and poor living conditions, - The promotion of occupational health and safety, - The development of environmental health Introduction to Health Economics 237 - The rehabilitation of the health infrastructure - The development of an appropriate health service management system. C. Appropriate support shall be given to the curative and

rehabilitative components of health including mental health. D. Due attention shall be given to the development of the beneficial aspects of traditional medicine including related research and it gradual integration into modern medicine. E. Applied health research addressing the major health problems shall be emphasized. F. Provision of essential medicine, medical supplies and equipment shall be strengthened. G. Special attention shall be given to the health needs of: - The family particular women and children, - Those in the forefront of productivity, - Those hitherto most neglected regions and segments of the population including the majority of the rural population, pastoralists, the urban poor and national minorities, - Victims of man-made and natural disasters. 5.4.4 General strategies A. Democratization within the system shall be implemented by establishing health councils with strong community representation at all levels and health committees at grassroot levels to participate in identifying major health problems, Introduction to Health Economics 238 budgeting, planning, implementation, monitoring and evaluating health activities. B. Decentralization shall be realized through transfer of the major parts of decision-making, health care organization, capacity building, planning, implementation and monitoring to the regions with clear definition of roles. C. Intersectional collaboration shall be emphasized particularly in: - Enriching the concept and intensifying the practice of family planning for optimal family health and planned population dynamics. - Formulating and implementing an appropriate food and nutrition policy. - Accelerating and provision of safe and adequate water for urban and rural populations. - Developing safe disposal of human, agricultural, and industrial wastes and encouragement of recycling. - Developing measures to improve the quality of housing and work premise for health. - Participating in the development of community based facilities for the care of the physically and mentally disables, the abandoned, street children and the aged. - Participating in the development of day-care centers in factories and enterprises, school health and nutrition programmes. Introduction to Health Economics 239 - Undertakings in disaster management, agriculture, education, communication, transportation, expansion of employment opportunities and development of other social services. - Developing facilities for workers' health and safety in production sectors. D. Health Education shall be strengthened generally and for specific target populations through the mass media, community leaders, religious and cultural leaders, professional association's schools and other social organizations for: - Inculcating attitudes of responsibility for self care in health and assurance of safe environment. - Encouraging the awareness and development of health promotive life-styles and attention to personal hygiene and health environment. - Enhancing awareness of common communicable and nutritional diseases and the means for their prevention. - In calculating attitudes of participation in community health development. - Identifying and discouraging harmful traditional practices while encouraging their beneficial aspects. - Discouraging the acquisition of harmful habits such as cigarette smoking, alcohol consumption, drug abuse and irresponsible sexual behavior. - Creating awareness in the population about the rational use of drugs. Introduction to Health Economics 240 E. Promotive and preventive activities shall address: - Control of common endemic and epidemic communicable and nutritional diseases using appropriate general and specific measures. - Prevention of diseases related to affluence and ageing from emerging as major health problems. - Prevention of environmental pollution with hazardous chemical wastes. F. Human resource development shall focus on: - Developing of the team approach to health care. - Training of community based task-oriented frontline and middle level health workers of appropriate professional standards; and recruitment and training of these categories at regional and local levels. - Training of trainers, managerial and supportive categories with appropriate orientation to the health service objectives. - Developing of appropriate

continuing education for all categories of workers in the health sector. - Developing an attractive career structure, remuneration and incentives for all categories of workers within their respective systems of employment. G. Availability of drugs, supplies and equipment shall be assured by: Introduction to Health Economics 241 - Preparing lists of essential and standard drugs and equipment for all levels of the health service system and continuously updating such lists. - Encouraging national production capability of drugs, vaccines, supplies and equipment by giving appropriate incentives to firms, which are engaged in manufacture, research and development. - Developing a standardized and efficient system for procurement, distribution, storage and utilization of the products. - Developing quality control capability to assure efficacy and safety of products. - Developing maintenance and repair facilities for equipment. H. Traditional medicine shall be accorded appropriate attention by: - Identifying and encouraging utilization of its beneficial aspects. - Co-coordinating and encouraging research including its linkage with modern medicine. - Developing appropriate regulation and registration for its practice. I. Health system research shall be given due emphasis by: - Identifying priority areas for research in health - Expanding applied research on major health problems and health service systems. Introduction to Health Economics 242 - Strengthening the research capabilities of national institutions and scientists in collaboration with the responsible agencies. - Developing appropriate measures to assure a strict observance of ethical principles in research. J. Family health services shall be promoted by: - Assuring adequate maternal health care and referral facilities for high-risk pregnancies. - Intensifying family planning for the optimal health of the mother, child and family. - Inculcating principles of appropriate maternal nutrition. - Maintaining breast-feeding, and advocating home made preparation, production and availability of weaning food at affordable prices. - Expanding and strengthening immunization services, optimization of access and utilization. - Encouraging early utilization of available health care facilities for the management of common childhood diseases particularly diarrhoeal diseases and acute respiratory infections. - Addressing the special health problem and related needs of adolescents. - Encouraging paternal involvement in family health - Identifying and discouraging harmful traditional practices, while encouraging their beneficial aspects. K. Referral system shall be developed by: Introduction to Health Economics 243 - Optimizing utilization of health care facilities at all levels. - Improving accessibility of care according to need - Assuring continuity and improved quality of care at levels - Rationalizing costs for health care seekers and providers for optimal utilization of health care facilities at all levels. - Strengthening the communication within the health care system. - Diagnostic and supportive services for health care shall be developed by: - Strengthening the scientific bases of health care. - Facilitating prompt diagnosis and treatment. - Providing guidance in continuing care. L. Health management information system shall be organized by: - Making the system appropriate and relevant for decisionmaking, planning, implementing, monitoring and evaluation. - Maximizing the utilization of information at all levels. - Developing central and regional information documentation centers. M. Health legislation shall be revised by: - Up-dating existing public health laws and regulations. - Developing new rules and regulations to help in the implementation of the current policy and addressing new health issues. Introduction to Health Economics 244 - Strengthening mechanisms for implementation of the health laws and regulations. N. Health service organization shall be systematized and rationalized by: - Standardizing the human resource, physical facilities and operational system of the health units of all levels. - Defining and instituting the catchment areas of health units and referral system based on assessment of pertinent factors. - Regulating private health care and professional deployment by appropriate licensing. O. Administration and management of the health system shall be strengthened and made more effective and efficient by: - Restructuring

and organizing at all levels in line with the present policy of decentralization and democratization of decision-making and management. - Combining departments and services, which are closely related and rationalizing the utilization of human and material resources. - Studying the possibility of designating under secretaries to ensure continuity of service. - Creating management boards for national hospitals, institutions and organizations. - Allowing health institutions to utilize their income to improve their services. Introduction to Health Economics 245 - Ensuring placement of appropriately qualified and motivated personnel at all levels. P. Financing the health services shall be through public, private and international sources and the following options shall be considered and evaluated: - Raising taxes and revenues - Formal contributions or insurance by public employees. - Legislative requirements of a contributory health fund for employees of the private sector. - Individual or group health insurance. - Voluntary contributions. In summary: The present Health Sector Development Program (HSDP) addresses all health service activities of the central and regional governments from basic services to specialized and referral services. It is expected to bring significant improvement to the entire health system and, in particular, to long-neglected rural areas and to especially vulnerable groups (such as mothers and children) that would benefit from the expansion of health services. The focus will be on the health conditions that contribute to the burden of diseases in Ethiopia. This health development program will primarily be implemented and managed by Introduction to Health Economics 246 regional, zonal, and “Woreda” – level structures, coordinated by steering committees established at all levels. Review Questions 1. Describe the major problems of health systems in developing countries. Introduction to Health Economics 247 2. What are the possible solutions by governments for those problems? 3. What is the relevance of encouraging diversity and competition in improving the health system? 4. Describe the implication of “Value for money” with respect to the purchasing process of government organizations. 5. Discuss the general strategies in the health sector development program of Ethiopia. Bibliography 1. Abel-Smith B. Value for money in health services; a comparative study, London 1969. Introduction to Health Economics 248 2. Bryant J. Health and the Developing world, London 1969. 3. Carrin G. Economic Evaluation of health care in developing countries, London 1984, 4. Creese, A. et al. Cost analysis in primary health care. 5. Geneva 1994 6. Culyer, A.J Need and the National Health Service; Economic social choice, Oxford 1976. 7. Culyer, A.J, et al. Economic Aspects of Health Services. London 1978. 8. Drummond, M.F. et al. Methods for the Economic evaluation of health care programmes. Oxford 1993. 9. Dwivedi, D.N. Managerial Economics, New Delhi, 1980. 10. Green, A. An Introduction to health planning in Developing countries. Oxford 1996. 11. IMF. Finance and Development; A quarterly publication of the International Monetary Fund and the Wrold Bank Washington. DC. Sept. 1993. 12. Jacoba, P. et al. Methods for the Economics of health and Medical care. Gaitheraburg, Maryland 1997. 13. Samuelson, P.A et al Economics McGraw-will 1989. 14. Sorkin, A.L. Health Economics, London 1975 15. World Bank. World Development Report 1993. 16. World Health Organization. The impact of Development policies on health, Geneva 1990 Introduction to Health Economics 249 17. World Health Organization, Evaluation of recent changes in the financing of Health services. 18. WHO Technical Report Series. Geneva 1993. GLOSSARY Cost What has to be given to achieve something? Either: a. The value of opportunities which are forgone in order to achieve Introduction to Health Economics 250 s o m e t h i n g (t h e e c o n o m i c definition); or b. The total money expenditure required to achieve something (the accounting definition). Average cost Total cost of therapy divided by the total quality of treatment unites provided. Capital cost The cost of employing capital goods. In an economic sense, it is the rate of return forgone by

not using the funds spent on particular capital goods in other ways. In accounting terms, it is the money expenditure required to purchase capital goods. Cost-benefit analysis Type of economic evaluation that measures costs and benefits in monetary units and computes a net pecuniary gain/ loss. Cost-effectiveness Efficient use of (scarce) resources. Introduction to Health Economics 251 Cost-effectiveness analysis Type of economic evaluation that measures therapeutic effects in physical or natural units and computes a cost/ e f f e c t i v e n e s s r a t i o f o r comparison purposes. Cost-minimization analysis Type of economic evaluation that finds the lowest cost programme among those shown to be equal benefit. Cost-utility analysis Type of analysis that measures therapeutic consequences in utility units (e.g. QALYs) rather than in physical units. DALY The Disability-Adjusted Life Year, a measure akin to the QALY in aggregating survival and quality of life effects, but normally advanced as a method of estimating the burden of illness associated with a disease, rather than the cost-effectiveness of health care interventions. Introduction to Health Economics 252 Decision analysis An explicit quantitative approach to decision-making under uncertainty, with a structure designed to represent t h e t r e a t m e n t o p t i o n s u n d e r investigation and normally based on a synthesis of data from the literature. Depreciation T h e v a l u e o f m a c h i n e r y a n d equipment that is lost during a given period of time in a given process as a result of wear and tear. Direct medical costs Fixed and variable costs associated with a health care intervention. Direct non-medical costs Non-medical costs associated with provision of medical services. Discounting The adjustment of future costs and benefits to render those occurring in different years comparable with each other and with current costs and benefits. The adjustment operates in the opposite way to compound interest, i.e. a positive discount rate Introduction to Health Economics 253 weights the future less than the present. Economics It is concerned with those aspects of h u m a n b e h a v i o u r, a n d t h o s e institutions, which affect the use of scarce resources to produce and distribute goods and services to satisfy human wants. Economic Evaluation A comparative analysis of two or more alternatives in terms of their costs and consequences. Effectiveness The therapeutic consequences of a treatment in a real world conditions. Efficacy The consequence (benefit) of a treatment under ideal and controlled clinical conditions, for example, in a clinical trial. Efficiency Relates to output per unit cost of the resources employed. Resources are being used efficiently if a given output is produced at minimum cost, or Introduction to Health Economics 254 maximum output is produced at a given cost. Equity Fairness or justice. Externalities Whenever an economic activity by one-agent influences the output or utility of another agent and this effect is not priced by the market and externality is said to exist. Fixed costs Costs which do not vary with the level of output in the time period considered (usually 1 one year). Health economics Application of the theories, concepts and tools of economics to the topic of health and health care. Health-related quality of life the impact on an individual’s well being of their health, often encompassing physical, mental and psychosocial elements. Health state A summary of an individual’s healthrelated quality of life. Introduction to Health Economics 255 HYE The Healthy Years Equivalent, a summary measure of health outcome analogous to the QALY in combining survival with quality of life, derived using a two-stage standard gamble technique. Incremental cost The additional cost that one service or programme imposes over another, mutually exclusive, alternative. Incremental cost-effectiveness ratio (ICER) t h e additional cost of producing an extra unit of outcome by one therapy compared with another. Indirect costs/productivity costs Cost of productivity r e s u l t i n g f r o m i l l n e s s o r treatment. Inflation The tendency of the general price level to rise Inputs G o o d s a n d s e r v i c e s u s e d i n production, such as capital goods Introduction to Health Economics 256 (buildings, equipment), labour, raw materials, etc. Intangible costs The cost of pain and suffering as a result of illness or treatment. Marginal cost The extra cost

of one extra unit of product or service delivered. Net benefit (NB) A summary of the difference between an intervention's mean incremental health effects (!E, normally measured in QALYs) and its mean incremental costs (!C) relative to an alternative. The incremental NB can be expressed in monetary terms (the money value of (!E minus !C) or, less frequently, health terms. A positive NB implies that the ICER is within the threshold ICER. Opportunity cost The benefit forgone from using a resource for one purpose as opposed to its best alternative use. Introduction to Health Economics 257 Outcomes The health effect of a certain process or output. Outputs The end result of production that is what is produced. QALY The Quality-Adjusted Life Year is the outcome of a treatment measured as the number of years of life saved, adjusted for the utility (quality of life). Scarcity The limited nature of economic resources in relation to the unlimited wants to employ and use them. Sensitivity analysis The assessment of the robustness of study results through systematic variation of key variables. Time trade-off A means of valuing health states on a 0-1 scale by asking individuals how many years in perfect health are equivalent to a given number of years in a less than perfect health state. Years in perfect health divided by years in the defined health state gives the value for that health state. Introduction to Health Economics 258 Utility A measure of the relative preference for, or desirability of, a specific level of health status or a specific health o u t c o m e . I n t e r m s , i t i s t h e satisfaction/pleasure derived from consuming some quantity of a good or service. Introduction to Health Economics

HEALTH ECONOMICS

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Nigeria……………………………………… 80-86 Unit 4 Economic evaluation of health programs…… 87-90 NSS 412 HEALTH ECONOMICS 1 MODULE 1 Unit 1 Introduction to economics Unit 2 Introduction to health economics Unit 3 Demand and supply in health care Unit 4 Cost of health care Unit 5 Budgeting UNIT 1 INTRODUCTION TO ECONOMICS CONTENTS 1.0 Introduction 2.0 Objectives 3.0 Main Content 3.1 Definition of economics 3.2 Basic concepts in economics 3.3 Demand and supply 3.3.1 Demand 3.3.2 Supply 3.4 Global economy 4.0 Conclusion 5.0 Summary 6.0 Tutor Marked Assignments 7.0 References/Further Readings 1.0 INTRODUCTION Economists are concerned with the wants of human beings. Among other things human beings want love, recognition, comfort of life and material things. Economists are concerned with our material wants which ultimately is to improve our well-being or make a living. Society's material wants are virtually unlimited and insatiable. Human basic needs include air, water, food, shelter and clothing but we seek to have much more than this in terms of goods and services that will make us live comfortably or have standard living. Human wants are several times more that the productive capacity of our limited resources, it is therefore difficult to satisfy our material wants. The means of producing goods and services are limited and scarce. Our desires for goods and services can not be completely satisfied. Over time wants of man change and multiply and this might be a result of development of new products and extensive promotion of the product or change in circumstances. NSS 412 HEALTH ECONOMICS 2 In this unit you will be able define economics and study basic concepts in Economics. You will also learn about demand and supply and understand economics with a global perspective. This unit will prepare to understand the subject health economics. 2.0 OBJECTIVES On completion of this unit, the learner should be able to: Define and understand what is meant by economics Understand basic concepts in economics which will be helpful in preparing the learner for good understanding of health economics Know about economy with a global perspective 3.0 MAIN CONTENT 3.1 Definition of Economics There are several definitions of Economics, some of the definitions which you can familiarize yourself with include: Study of how we use scarce resources to produce goods and services to satisfy our wants. Social science concerned with the efficient use of limited or scarce resources to achieve maximum satisfaction of human material wants The study of how best to allocate scarce resources among competing ones These definitions are similar and clearly related to each other, each has its own special terms and meaning. There are no significant differences in the definitions. 3.2 Basic Concepts in Economics You need to understand certain basic concepts in economics to have a clear understanding of health economics. The basic concepts include; goods, scarcity, opportunity cost, rational choice, economic resources, utility, demand and supply.
1 Good is a tangible object that is capable of satisfying human wants. Materials like cars, clothes, food, cookers can be regarded as goods and health can also be considered an economic good. NSS 412 HEALTH ECONOMICS 3 Service is an intangible action that is capable of satisfying human want – such services include water supply, health care, waste disposal, etc. Services satisfy our wants as much as goods do. Goods such as sphygmomanometers, suction machine are used to provide services. Scarcity is a condition in which it is impossible to satisfy all human wants for goods and services and this forms the central concept in economics. Scarcity is said to occur when we can not have every good or service that we need or when we want something that we can not have. No one can have everything that he or she wants and we therefore have to select goods and services we think can give us greatest satisfaction. For example some people who are economically disadvantaged may have to choose between going for health care and using the available money to pay school fees or house rent. Scarcity exists at individual, institutional, community and government levels. Opportunity Cost is defined as the value of the second best choice that is given up when a first

choice is made. Every choice one makes is a trade-off between the benefits and costs of one's decision. Usually one will want to make a choice that will result in the smallest opportunity cost and the greatest possible benefit. If this is the case then one has made a rational choice. If a person chose to use little money available to him to buy prescribed drugs for his child as against the other choice of buying alcoholic drink, that choice can be considered rational. From this example one can imagine how well people choose to make rational choice. Rational behaviour means that different people will make different choices because their preferences, circumstances, and available information differ. Rational decisions may change as circumstances change. Try to imagine how our culture makes people spend their money on ceremonies rather than spending such money to take care of them so that they can live well. Utility is the benefit consumers get from the purchase of goods and services. It helps to determine how much the consumer is willing to pay. Marginal utility is the additional utility gained by consuming one more unit. Economic resources are all natural, human, and manufactured resources which go into the production of goods and services. It is broadly divided into two: NSS 412 HEALTH ECONOMICS 4 Property resources include land (natural resources) or raw materials and capital. Human resources include labour and entrepreneurial ability. SELF ASSESSMENT EXERCISE 1 Attempt to define the following terms; Good, Service, Scarcity and opportunity cost. Try to understand these terms in your own words and then see how you apply this to the day to day things in your environment. 3.3 Demand and Supply 3.3.1 Demand Demand is the quantity of a product that consumers will purchase at each possible price. Under normal condition there is a relationship between the price of a product or service and the quantity that will be demanded. The law of demand states that if everything else remains equal, more of a product will be purchased at a lower price than at a higher price or less of a product will be purchased at a higher price than a lower price. For example a doubling in the cost or price of a contraceptive will result in less demand if all else are equal and conversely a reduction in the price or cost will result in increase in demand. If all else are equal implies an assumption that no other event takes place other than the change in price to affect willingness of clients to patronize the service. You can try and understand demand in the context of goods purchased for food in our markets. What happens when many people suddenly get interested in buying a product particularly during festivities? Determinants of demand Tastes and preferences – Personal feelings toward the value or desirability of various products. The desire for a particular type of frame for eye glasses may be determined by the individual's taste which may be influenced by what is in vogue. Disposable income – The amount of income that people have left after they pay their taxes. The quantity of products that people buy depends on the disposable income. If you were given some **NSS 412 HEALTH ECONOMICS** 5 money as a gift you are likely to make demand for certain items which you probably may not demand for if you were not given this gift. There is a direct relationship between disposable income and demand under normal circumstances. However, sometimes demand for low quality or inferior goods are inversely related to income. Demand for low quality or fake drugs and even low quality health care is usually higher among those with low income. Price of related goods – When the price of a good changes it often have effect on the demand for a related product (substitute good) which can be used in place of the other. If you find that you can not afford to buy tin milk as a result of price increase you may choose to buy powdered milk. Increase in price of certain drugs may result in higher demand for alternatives to the drugs. Number of consumers – Increase in the number of people who purchase a product or utilize a service will bring about a change in demand. In epidemics, the large number of people affected brings about an increase in demand of some drugs or vaccines required to manage or control the

epidemics. Expectation of the future – Demand for a product can change based on their expectation for the future 3.3.2 Supply Supply is defined as the quantity of a good or service that firms will offer for sale at each possible price. The Law of supply states that if not else changes, more of a product will be offered for sale at a higher price than at a lower price or conversely less of a product will be offered for sale at a lower price than at a higher price If the price of a product increases the quantity supplied will increase. The basic determinants of supply are: Resource prices – the price used in the production of the good or service. This determines the price of the goods. If the price of production becomes higher it may reduce the supply of such goods. Technique of production – With improvement in technology some goods become cheaper to produce and thus improve the supply of such goods. Taxes and subsidies – Increase in sales or service tax will increase cost of good or service and where subsidies increase then the cost reduces. Government subsidy on drugs can increase supply of drugs NSS 412 HEALTH ECONOMICS 6 Prices of other goods – In manufacturing firms, increase in price of a particular product may make the firm shift to production of similar product of lesser price and through this increase supply Price expectations – Expectation of the future price of a product can affect the producers current willingness to supply that product Number of sellers in the market – Other things being equal the more the number of people or firms involved in the supply of a product or service the more the market supply. Increase in the number of firms producing anti-retroviral drugs (ARV) result in increase in the supply of the drug in the market. Demand and supply – For an equilibrium price, the quantity offered and the quantity demanded are the same. As supply goes up and demand goes down, the price is likely to go down. As the supply goes down and the demand goes up, the price is likely to go up. You will observe that the later is usually what is faced during scarcity of petrol in Nigeria in which case the price of petrol goes up. SELF ASSESSMENT EXERCISE 2 Try and define demand and supply and list out those things that determine the demand and supply of certain goods you use frequently. 3.4 Global Economy Economic Systems Economic system is a set of rules or understandings that govern how scarce resources are used to produce goods and services that satisfy human wants. They are not isolated from the political and social organization or system. All nations have economic systems. All nations are faced with the problem of scarcity because of limited resources. This scarcity forces every economic system to address three central economic questions which are: (1) What goods and services will be produced from our scarce resources? (2) How will goods and services be produced? (3) For whom will goods and services be produced? Based on answers to these questions there are the following economic systems in the world: NSS 412 HEALTH ECONOMICS 7 Capitalism – An economic system in which the factors of production are owned and controlled by the people. In capitalism people sell goods or service to earn a profit. People have private property and also have freedom of choice to spend their income. In capitalism firms exist to earn a profit. Role of government in market economy is limited and there is competition. Private clinics exist to make profits and are privately owned by individuals or groups. Socialism – An economic system in which the government owns and controls the factors of production. Socialists believe that the system of private ownership and control in capitalism results in many resources being allocated to the production of goods and services for the rich, while the poor are ignored. They believe that their economic system is more stable than capitalism. Workers are ensured employment. Socialists believe people should receive a share of the goods and services that are produced, regardless of the value of their contribution to production. Socialism is not the same as communism. Communism – is an economic and political system that combines government ownership and control of the factors of production with a totalitarian form of government. Mixed economies – where capitalism and

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socialism as economic systems are in place, this is commonly the case in many countries. SELF ASSESSMENT EXERCISE 3 List examples of countries which fall into the economic systems describe above. Which economic system is in place in Nigeria and what are the reasons for your answer. 4.0 CONCLUSION You have to understand that the study of economics is relevant to everyday living and knowledge of the basic concepts of economics will prepare you to understand health economics as elaborated in the subsequent units. The economic system of a nation is the underlying factor for demand for services and it determines the way goods and services are supplied. NSS 412 HEALTH ECONOMICS 8 5.0 SUMMARY In this unit you have been exposed to the meaning of economics, the basic concepts in economics which you need to understand before you can understand the dynamics of health care from the economic point of view. This unit has shown you what demand and supply is and the global economic systems. 6.0 TUTOR MARKED ASSIGNMENTS 1. Define the following terms and give appropriate illustration a. Economics b. Scarcity c. Capitalism 2. Describe the determinants of demand for goods and services with relevant examples. 7.0 REFERENCES/FURTHER READINGS McConnell C.R., Brue S. (1999). Microeconomics: Principles, Problems, and Policies. 14th Edition. Irwin McGraw-Hill, USA. Schiller B.R. The economy today. 9th Edition, 2003. McGraw-Hill/Irwin Companies, New York. Stafford A.L., LoCascio H.C. Introduction to Economics. 1994. Published by Glencoe/McGraw-Hill, 21600 Oxnard St., Woodland Hills, CA. Tomey A.M. (2003). Guide to Nursing Management and Leadership. 6th edition. Elsevier Science (Singapore) PTE Ltd, Singapore NSS 412 HEALTH ECONOMICS 9 UNIT 2 INTRODUCTION TO HEALTH ECONOMICS CONTENTS 1.0 Introduction 2.0 Objectives 3.0 Main Content 3.1 Definition of Health economics 3.2 Importance of Health economics 3.3 Concepts in health economics 3.3.1 Health as economic good 3.3.2 Medical economics 3.4 The economy and health 3.5 Globalization and health 4.0 Conclusion 5.0 Summary 6.0 Tutor Marked Assignments 7.0 References/Further Readings 1.0 INTRODUCTION This unit defines health economics and look at looks at certain basic concepts that will help you to understand health economics. Before now relatively little attention is placed on health economics in developing countries. As a result of scarcity health economics is now taking a center stage in health management. Your sound knowledge of health economics will assist you as an individual health care provider to understand the dynamics of health care in terms of institutional policies, ways of implementation and how best results can be achieved within the limits of available resources. Inefficiency in using resources available for health care has affected coverage and quality of health care delivery in developing countries. You need to understand that for any nation to develop its citizens must be productive and they can be productive only when they are healthy. 2.0 OBJECTIVES On completion of this unit, the learner should be able to: Define and understand what is meant by health economics and its importance Understand basic concepts in health economics which will be helpful in preparing the learner for good understanding of other units in this module NSS 412 HEALTH ECONOMICS 10 Assist the learner to see how economy affects health and vice-versa Understand the demand and supply concepts in health care 3.0 MAIN CONTENT 3.1 Definition of Health Economics Health economics is defined as the application of the theories, concepts, and techniques of economics to the health sector. It is concerned with issues like allocation of resources within the various health care strategies, quantity and quality of resources used in health care delivery, funding of health care services, efficiency in use resources allocated for health care and the effects of preventive, curative, and rehabilitative health services on individuals and the society. 3.2 Importance of Health Economics You will remember that we defined economics as the study of use of scarce resources. Resources in the health sector like other sectors are not enough to satisfy man’s

health wants. The main function of health economics is to apply economic theory to practical problems of rationing the use of resources for effective health care services. In response to peoples needs and demand. There is increasing attention on health economics globally as result of renewed cost-consciousness within the health system and the shift from exclusively humanistic approach to one incorporating an increasing use of managerial techniques and quantitative research methods. Countries all over the world are faced with increased burden of health care and pubic fund available to the health sector are often short of what is required. You’re your experience and observation you probably would have made, resources required for health services and needs constitute a significant proportion of family, community and government expenditure. This situation is a common feature in developing countries. Costs of medical care is increasing due to heavy disease burden, technological changes and increasing cost of required inputs for health care. In view of the problem of scarcity, health economics has become an important area of health for which need some level of understanding. Countries need healthy citizens to develop. As a person you will remember how unproductive you were when you were ill. NSS 412 HEALTH ECONOMICS 11 3.3 Concepts in Health Economics 3.3.1 Health as an Economic Good Health can be seen as an economic good or service. The nature of health is such that it can be seen as a collective good. Collective goods (or social goods) are defined as the public goods that could be delivered as private goods, but are usually delivered by the government for various reasons, including social policy, and financed from public funds like taxes. 3.3.2 Medical Economics Often used synonymously with Health economics. Medical economics is the branch of economics concerned with the application of economic theory to phenomena or problem associated typically with cost-benefit analysis of pharmaceutical products and cost-effectiveness of various medical treatments. Medical economics often use mathematical models to synthesize data from biostatistics and epidemiology for support of medical decision making, both for individuals and for the wider health policy. This module will not discuss the details of medical economics. SELF ASSESSMENT EXERCISE 1 Define again or try to explain some basic concepts of economics in Unit 1, relate them to what you have read so far in health economics 3.4 The Economy and Health Health plays a major role in the socio-economic development of a people. Health can no longer be seen as bye-product of develop but rather a pre-condition for economic development. The health sector is just one of the components of the economic system; every sector of the economy has a bearing with the health sector and can not be underestimated for socio-economic development. Economic development requires a healthy workforce. Try and imagine a workforce where about a third of them are ill at the same time, you know that in that situation productivity will be low. Improvement in health status of a country represents both gains in welfare and an investment on the countries future growth. Healthy people are more productive, perform better in learning and can work to make income. Unhealthy people may not be able to work to have income and if they work will be less productive. You know that a nation with large number of unhealthy people will be required to spend NSS 412 HEALTH ECONOMICS 12 much money on health care and have little for other activities. Poor health therefore lowers prospects of development for a nation. Also, economic development is usually followed by changes in production which have positive impact on the health of the population, although economic development does have negative impact on health too. Certain diseases like cardiovascular diseases and cancers are commoner in well developed countries than in the less developed countries mainly because of change in lifestyle resulting from economic development. For example consumption pattern changes with economic development. Obesity is usually a significant public health problem of developed countries whereas malnutrition is a problem of underdeveloped countries. Generally economic development has more positive than negative effect on the

health of people. Economic development makes more money available to the health sector for provision of services. Health is higher on the international agenda than ever before. Concern for the health of poor people is a central development issue. In addition to its intrinsic value on individuals, investment in health is an important and previously underestimated means of economic development. Substantially improved health outcomes are a pre-requisite if developing countries are to break out of the cycle of poverty. SELF ASSESSMENT EXERCISE 2 i. List 4 ways health can affect economy ii. List 4 ways economy can affect health Figure 1: Health spending around the world NSS 412 HEALTH ECONOMICS 13 SELF ASSESSMENT EXERCISE 3 i. List 5 countries and the continent they belong to, that are developed. ii. List 5 countries and the continent they belong to, that are developing. 3.5 Globalization And Health Globalization is reshaping the social geography within which humanity strives to create health or prevent disease. The determinants of health and disease – be they SARS virus or increasing HIV/AIDS are affected by increasing global mobility. You often here people say the world is a global village. What happens in one country readily have effect on other countries. Impact of globalization on health Driven by economic liberalization and changing technologies, the phenomena of 'access' is likely to dominate to increasing extent the unfolding experience of human disease and well-being. The extent to which individual countries are able to engage the process of globalization on their own terms differs widely from country to country. Child mortality, for example, changes quickly in response to subtle changes in purchasing power in impoverished communities. In affluent communities however, a small change in income has little effect on utility in either direction. The long term effect of globalization on NSS 412 HEALTH ECONOMICS 14 wellbeing is different for populations who are dependent on fragile local economics. A significant change in the price of some goods in some of the developed countries or even policy shift may have effect on another country which may affect the health of its people. Globalization has brought about high movement of people from one country to the other mainly a result of economic activities. With these movements are some diseases that easily get across borders of countries. 4.0 CONCLUSION Health economics is a important discipline that is now gaining much attention in developing countries in view of the growing health burden, need for higher health expenditure in the midst if inadequate fund. To have development countries must have citizens that are productive and to be productive one need to be in good health. It is therefore imperative that health brings about development. Development also result in more money made available for health care. Economic development can however have negative effects on health that result from change in lifestyle that are detrimental to health. 5.0 SUMMARY In unit you have been able to go through the definition of health economics and some basic concepts in health economics. To develop every country need to have healthy citizens. The relationship between economy and health has been described in this unit. Some countries that are poor unfortunately go though the cycle of poverty and poor health since they have little resources for health care, its citizens remain unhealthy and therefore unproductive. 6.0 TUTOR MARKED ASSIGNMENTS Describe the relationship between economy and health. 7.0 REFERENCES/FURTHER READINGS Culyer A.J. (1989) A Glossary of the more common terms encountered in health economics" in MS Hersh-Cochran and KP Cochran (eds) Compendium of English Language Course Syllabi and Textbooks in Health Economics, Copenhagen, WHO, 215-234. Development in Practice. Better Health in Africa: Experience and Lessons Learned. The International Bank for Reconstruction / The World Bank. USA 1994. NSS 412 HEALTH ECONOMICS 15 http://www.paho.org/English/DD/PIN/ptoday18_sep05.htm Tomey A.M. (2003). Guide to Nursing Mangement and Leadership. 6th edition. Elsevier Science

(Singaphore) PTE Ltd, Singapore NSS 412 HEALTH ECONOMICS 16 UNIT 3 DEMAND AND SUPPLY IN HEALTH CARE CONTENTS 1.0 Introduction 2.0 Objectives 3.0 Main Content 3.1 Concept of demand and supply in Health care 3.2 Reasons why health care needs exceeds demand 3.3 Demand and supply of health care services in developing nations 3.4 Elasticity of demand 3.5 Resource allocation in health care 4.0 Conclusion 5.0 Summary 6.0 Tutor Marked Assignments 7.0 References/Further Readings 1.0 INTRODUCTION Supply and demands lead to demand-based pricing. Higher prices are paid for products or services that are in high demand. Reduced demand leads to lower prices. Strategic planning is needed to determine which activities can be in the most demand and make the most profits. In the early 1960s, economists first became interested in estimating demand for health services. Supply of trained nurses in United States is not increasing nearly as fast as the demand. The demand for medical services will depend on the price of that service, other prices, income and tastes. In this unit you will read through demand and supply in health care. 2.0 OBJECTIVES In this unit you are expected to understand The concept of heath care demand and supply Know the reasons for the difference in health care need and the demand for health care Understand elasticity of demand Know about resource allocation in health NSS 412 HEALTH ECONOMICS 17 3.0 MAIN CONTENT 3.1 Concept of Demand and Supply in Health Care Every individual has a need or a potential need for health care in the form of health promotion, prevention, cure or rehabilitation. This need is not always translated into a demand for health care particularly in developing countries for various reasons. Health need is transformed into a health care demand for example when a patient seeks a medical care. All the needs and wants of society can not be met at the same time even in richer countries, so that opportunity cost are incurred by all users of resources, and the scarcer the resources, the higher the opportunity costs. In the case of health and health services, these costs are incurred both by producers of health services, through their use of staff, buildings, equipment and materials supplies, and by consumers, who use transport to health services, buy drugs, etc. Not all demand will become needs and not all needs will find expression as demand. You do know that some people get sick and have the need to be treated but they do not demand for treatment. 3.2 Reasons Why Need For Health Care Far Exceeds The Effective Demand For It Includes a. Price of health care may not be affordable by the individuals (Affordability). b. The Individuals may not have ready access to the health facility at a time or place that is convenient (Geographical accessibility). c. The service required may not be available to the individual (Availability). d. Religious and cultural believes and practices may hinder the use of the health facilities (Acceptability). e. Cost of time off from work and costs of waiting. 3.3 Demand And Supply Of Health Care
1 Services In Developing Nations The demand for health care in developing countries is largely influenced by the above factors. The extents to which these factors are being reversed in developing countries vary considerably among nations and even within nations. The global economic recession has made affordability of health care service far from the reach of the common NSS 412 HEALTH ECONOMICS 18 man in these countries. Therefore, utilization of health facilities is seriously affected particularly with the changing trend in which free health care is fast disappearing. The supply of health care is multifaceted. The supply can be in the form of promotion, preventive, curative, and rehabilitative health care. In Nigeria, this can be provided at the various levels of health care namely; primary, Secondary and Tertiary health Care. The health sector in developing countries consists of a heterogeneous mixture of public or government activities and non-government activities including services provided by both modern and traditional practitioners. The level of demand for health care goes far beyond the level of supply. Economic recession has made geographical accessibility and availability of health care difficult, this affect coverage.

Undersupply of sufficient trained personnel must be tackled as it remains a major health problem. Large number out of the inadequate health personnel emigrate to developed countries. There is also the problem of under use of some of the personnel available. Most of the skilled health care personnel in African countries are found in the urban areas to the detriment of the rural areas where we know about 70% o the population live. In 1988, the World Bank conducted an extensive study on household demand for outpatient services in Ogun State. The empirical model assumed that choice of health care is a function of the following; price of the care, quality of the care, sex and education of the patients, wealth of the household, income of the household, urban residence, symptoms of the illness and seriousness of the illness. SELF ASSESSMENT EXERCISE 1 List reasons why health care demand is les than the need for health care in Nigeria. 3.4 Elasticity Of Demand This is the degree to which the demand for a good or service decreases in response to a price increase and increase in response to a price decrease. The demand for health care is generally inelastic. Demand for health care is generally elastic because of the nature of health problems which often require that sufferers take some action to demand for care. Demand for health care, especially curative health care NSS 412 HEALTH ECONOMICS 19 tend to be price inelastic, meaning that any increase in user fees will result in a less than proportionate drop in demand and thus increase in revenues. This is because when it gets to some stage people will have to take up health care even when they can not readily afford it unlike the case with some other goods. Most of those consumers that are unable to utilize service in public facilities because of cost seek care from some other sources particularly if the private providers are price-competitive. 3.5 Resource Allocation For Health Care If health care systems devote greater attention to preventive and primary care, the recovery of costs at public hospitals takes a monumental importance. The determination of what proportion of fund available should be allocated to preventive care is dependent on a number of reasons; it is well known that preventive health care delivery is cheaper to the society. From basic economic point of view it is better to pay more attention to preventive care than curative care in resource allocation. When the high capital and recurrent costs of hospitals are financed by government, then government health budget will be much more towards hospital services. In most African setting it is the urban fairly well to-do families that have easy access to this level of care and they therefore receive a disproportionate share of government subsidy on health to the detriment of the largely poor rural dwellers. This situation worsens the problem of equity. The pyramid of curative health care in Nigeria has primary health care as its base and then followed by secondary health care which is made up of general, cottage and mission/big private hospitals. The apex of the pyramid is the tertiary health care consisting mainly of teaching and specialist hospitals. Primary health care is the closest and first point of contact with the health system and therefore should attract adequate resources in terms of personnel, funds, equipment and materials. The more the simple cases that are treated at higher levels of health care, the more the inefficiency in health system 4.0 CONCLUSION In every community the need for health care is always there but not all translate into demand for health care. Price increase in health care does not lead to a proportionate decrease in demand (unlike some other goods) because of desire of people to be in good health. Demand following price increase in a particular facility may result in individuals trying some other places for alternative health care. NSS 412 HEALTH ECONOMICS 20 To have development countries must have citizens that are productive and to be productive one need to be in good health. It is therefore imperative that health brings about development. This need to be achieved through efficient allocation of resources to the various segments and levels in health care delivery 5.0 SUMMARY In unit you have been able to go through demand and supply in health

care. Demand for health care particularly in developing countries has been described along with its determinants. To develop every country need to have healthy citizens. You have been exposed to the important issue of resource allocation in the health sector. 6.0 TUTOR MARKED ASSIGNMENTS Discuss the various determinants of demand for health care in the context of your locality. 7.0 REFERENCES/FURTHER READINGS Culyer A.J. (1989) A Glossary of the more common terms encountered in health economics" in MS Hersh-Cochran and KP Cochran (eds) Compendium of English Language Course Syllabi and Textbooks in Health Economics, Copenhagen, WHO, 215-234. Development in Practice. Better Health in Africa: Experience and Lessons Learned. The International Bank for Reconstruction / The World Bank. USA 1994. http://www.paho.org/English/DD/PIN/ptoday18_sep05.htm Tomey A.M. (2003). Guide to Nursing Mangement and Leadership. 6th edition. Elsevier Science (Singaphore) PTE Ltd, Singapore. NSS 412 HEALTH ECONOMICS 21 UNIT 4 COST OF HEALTH CARE CONTENTS 1.0 Introduction 2.0 Objectives 3.0 Main Content 3.1 Types of health care cost 3.2 Elements of cost 3.3 Benefits of health care 3.4 Economic appraisal in health care 3.5 Reasons for the present trend in cost of health care 3.6 Peculiarities of health care market 4.0 Conclusion 5.0 Summary 6.0 Tutor Marked Assignments 7.0 References/Further Readings 1.0 INTRODUCTION The cost of health care is high and has increased rapidly. Higher health care prices combined with an increase in the quantity of services provided has resulted in rising healthcare cost. The spending on health care involves 'prices' and 'quantities' and is often loosely referred to as healthcare costs. The production of health care requires scarce resources such as capital in the form of hospital facilities and diagnostic equipment and the highly skilled labor of physicians, technicians, nurses and other paramedical staff. SELF ASSESSMENT EXERCISE 1 What are the things that make up cost of health care? 2.0 OBJECTIVES On completion of this unit, the learner should be able to: Understand the various types and elements of health care cost To be familiar with the reasons for the increasing cost of health care Know the peculiarities of the health care market NSS 412 HEALTH ECONOMICS 22 3.0 MAIN CONTENT 3.1 Types of Health Care Cost The economic cost of a disease consists of direct and indirect cost. Direct cost is monetary expenditures attributable to the disease and indirect cost is what can be associated with loss of output attributable to the disease owing to premature death or disability. There are four (4) different types of health care cost as described below and they include: Direct medical cost – Medical cost incurred for medical products and services used to prevent, detect, and or treat a disease. These covers costs for drugs, laboratory tests and supplies. This cost has monetary value that is you cost it terms of Naira. Direct non-medical cost – This type of cost cover non-medical services that results from illness but do not involve purchasing medical services. Example of this type of cost include cost of transportation, food, family care. This type of cost is usually enourmous in developing countries where several relatives, friends come around to get involved in the care of patients. Indirect non-medical cost – This type of cost result from reduced productivity because of ill-health. When a patient is unable to do his usual job, the loss of productivity and income is at a cost. Intangible costs – These are non-financial outcomes of disease and medical care not expressed in monetary value. The non-financial outcome can be in form of suffering, pain and grief. This cost can not be estimated in monetary value. 3.2 Elements of Cost Cost comprises three (3) elements. i. Loss of production. ii. Expenditures for medical care. iii. Pain, discomfort and suffering that accompany the disease. In analysis the last is often neglected because of inadequate data. NSS 412 HEALTH ECONOMICS 23 SELF ASSESSMENT EXERCISE 2 List the types of health care cost and give 5 examples of each type. 3.3 Benefits from Health Care The types of benefits the individual receives from health care could be psychic or monetary, they include: a. Relief from pain, suffering, anxiety etc. b. Benefits in the form of capital good

being monetary “pay off” measured by increased production. 3.4 Economic Appraisal in Health Care Economic efficiency is relevant in health care because the resources that are used in providing services and programs are scarce. Since resources is not and can never be enough to satisfy human wants completely, their use in one beneficial activity means that the community automatically foregoes the opportunity to use the in another beneficial activity. Remember what you learnt in Unit 1 and 2 on the basic concept of economics and health economics. Expenditure on medical care is rising in both developing and developed countries. In-patient services are a large and fast growing part of all health service expenditures, staff costs which alone account for about half the cost of all personal health care and this together with drug costs take up the largest share of all health service expenditures. You can now begin to imagine that the real cost of health care is much more that what patients pay for in most public health facilities in developing counties. To evaluate the costs of health care to the society rather than to a category of users, the money spent on resources is not considered a good indicator. Such expenditure might be artificially high owing to high taxes or profits or artificially low owing to subsidies and grants. Economic efficiency in health care can be defined as the provision of necessary care of good quality at minimum cost. Therefore the aim is to move towards a better economic balance of services and eliminate ineffective, excessive and unnecessary medical procedures. Many economic factors are beyond the control of health decision makers, but one measure well within their powers is to curb the growth of high-cost programs and services for the few and promote low-cost services which, NSS 412 HEALTH ECONOMICS 24 by using less expensive primary health care personnel which will reach a much larger proportion of the community. It is important to encourage cost awareness among health care providers in view of the scarce resources from both the private and the public. There is also a need to make consumers aware of the costs of health by being better informed on the choices available to them and the cost of the choices so that they can make well informed decisions to save cost. SELF ASSESSMENT EXERCISE 3 What do you understand by economic efficiency in health care? 3.5 Reasons for the Present Trend in Cost of Health Care The reasons for the current trend in cost of health include: i. Demographic reason – There is population growth in developing countries, to keep pace with this growth, health care cost has to increase. ii. Labour intensive nature of health services – Health care is labour intensive and there is limited scope for saving on labour cost in personal health services. Skilled people are required to provide health care iii. Quality of health services – Advances in technology has improved quality of diagnosis and therapy. Unfortunately the cost is often greater than the increased effectiveness achieved. Try and think of the various equipments we use today as compared with what obtains some 10 – 20 years ago. iv. Public expectation – People desire increasing standard facilities in health services, there is high demand for curative health care while underutilizing preventive personal health service particularly in developing countries. v. Changing epidemiological picture during socio-economic development – chronic and degenerative diseases and their high cost of care or cure. vi. Organization and structure of health system – There are situations where multitude of agencies are financing and delivering parallel and uncoordinated health services with consequent overlapping. This is much more in preventive health care services. vii. Extension of health services coverage – The attempts to extend the range, coverage or impact of services to a larger population increase costs. NSS 412 HEALTH ECONOMICS 25 3.6 Peculiarities of Health Care Market Ethical and equity considerations – The society regards health care as an entitlement or a right and is reluctant to ration it solely by price or income unlike other goods and services. This is because in health care human life is involved and this inevitably raises ethical issues. Therefore you can appreciate that unlike

other markets health care cost must take consideration of the human life involved. Asymmetric information – Health care providers particularly physicians possess the informaion and knowledge concerning details of treatment and diagnostic procedures patient need, while the buyer (client or patient) has little information concerning this. The providers who in this context are the supplier dictate what the patient (consumer) should consume. The consumer is not the one in the position to determine what to buy unlike other goods and services. The result of this asymmetric inforrmation is supplier induced demand. In simple terms most providers ‘dictate’ to the patient what they have to spend money on take care of their health. Spillover effects – The service received by consumers sometimes generate a spillover effect in which not only the consumer benefit from the heath care someone receoved but also a third party. If majority of a population are immunized against a disease, the transmission of that disease reduces significantly that even those not vaccinated get reduced chance of being affected by the disease that others are immunized again. The fact that people receive medical care when they are ill and return back to work to become productive make a third party benefit from their recovery and return back to work. A healthy labor force is more productive, contributing to the general prosperity and well-being of the society. SELF ASSESSMENT EXERCISE 4 Give reasons for the increasing cost of health care to individuals and to the society at large. NSS 412 HEALTH ECONOMICS 26 4.0 CONCLUSION Health care cost is made of different things which may be direct or indirect cost. All over the world the cost of health care is on the increase as result of incresing population particularly in developing countries, increased burden of disease and the use of costly facilities and equipment in addition to the skilled personnel required to provide service. Health care market is peculiar since it has to do with human life unlike othe goods which if not affordable can be left unpurchased? The providers largely determine what the consumers need to pay for unlike other forms of market in which the consumer have nough information to determine exactly what he needs and to what extent the thing to be paid for will be beneficial. 5.0 SUMMARY In this unit you have been able to go through what makes up cost of health care which are mainly grouped into direct and indirect cost. The real cost of health care, when all these costs are considered, can be so much. Ill health can therefore be seen as something that cost individuals and societies a lot of money. Also you have been able to learn the comon reasons for the increasing cost of health care and the peculiarities of the health are market. 6.0 TUTOR MARKED ASSIGNMENTS 1. Discuss the various types of health care cost and the major things that make up these types of costs in your own locality. 2. Discuss the reasons for the increasing cost of health care in public and private health facilities in Nigeria 7.0 REFERENCES/FURTHER READINGS

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Hill. Pp 441 - 457. NSS 412 HEALTH ECONOMICS 28 UNIT 5 INTRODUCTION TO BUDGETING CONTENTS 1.0 Introduction 2.0 Objectives 3.0 Main Content 3.1 Definition of Budget 3.2 Basic concepts related to budget 3.3 Types of budget 3.3.1 Operating budget 3.3.2 Personnel budget 3.3.3 Capital expenditure budget 3.3.4 Cash budget 4.0 Conclusion 5.0 Summary 6.0 Tutor Marked Assignments 7.0 References/Further Readings 1.0 INTRODUCTION Every health organization is involved in budgeting. Organizations budget for their humans and material resources. Nurses particularly at the managerial level need to be fmiliar with the pricinples and process of bugeting. Budgetary leaders inspire proactive fiscal planning, determine resource needs, guide visioning of justification for resources, and negotiate for needed resources. Nursing managers also also need to analyze expenses, anticipate, recognize and creatively deal with budgetary problems. Budgets help coordinate the efforts of the organization by determining what resources will be used by whom, when and for what purpose. Budgets can be prepared by units in an organization or for each function in a unit. In most developing countries it is common to find budgets for the organization and units hardly have their own developed budget. SELF ASSESSMENT EXERCISE 1 List the advantages of budgeting in a family. Attempt to group what can be budgeted for then relate this to a health institution. NSS 412 HEALTH ECONOMICS 29 2.0 OBJECTIVES In this unit you will be required to: Understand and be able to define budget. Know and understand the various types of budget. Be familiar with the advantages and disadvantages of budgeting 3.0 MAIN CONTENT 3.1 Definition of Budget Budget is defined as a quantitative statement, usually in monetary terms, of the expectations of a defined area of the organization over a period of time in order to manage financial performance. Budget can also be seen as a plan for the allocation of resources and a control for ensuring that the results comply with the plans. The results are expressed in quntitative terms. Budgets are often associated with financial statements, such as revenues and expenses; they may also be in form of non-financial statements covering output, materials and equpment. SELF ASSESSMENT EXERCISE 2 Attempt to define budget in your own words. 3.2 Basic Concepts Related To Budget Budgeting – Is the process of planning and controlling future operations by comparing actual results with planned expectations. Controlling – It is the process of comparing actual results with the results projected in the budget. Incremental (line-by-line) budget – This is a budget worksheet listing expense items on separate lines. This is usually divided into salary and non-salary expenses. The worksheet may include several columns for the amount budgeted for the current year, the amount actually spent year-to-date, the projected total for the year based on the actual amount spent, increases and decreases in the expense amount for the new budget, and the request for the next year with an explanation attached. NSS 412 HEALTH ECONOMICS 30 This line-by-line budget has the advantage of simplicity but the disadvantage that it discourages cost-efficiency. Astute managers ensure that they spent the entire amount budgeted for the year to avoid budget cuts in the next year. Zero-based budget – This is a budgetary approach that assumes the base for projecting next year's budget is zero. Managers are required to justify all activities and every proposed expenditure, regardless of the level of expenditure in previous years. Every expenditure for the new year must be justified in view of organization's objectives and current environment. Fixed budget – A budget in which budgeted amounts are set regardless of changes that occur during the year such as volume of patient, unanticipated inflation Variable budget – A budget developed with the understanding that adjustments to the budget may be made during the year based on changes in revenues, patient volume, utilization of supplies, and other expenses. Fiscal budget – A specified 12-month period during which operational and financial performance is measured. 3.3 Types of Budget 3.3.1 Operating Budget This is also known as Revenue-and –expense budget or

annual budget. It is the organization's statements of expected revenues and expenses for the coming year. It coincides with the fiscal year of the organization which in the public sector in Nigeria corresponds to the calendar year – January to December. The operating budget reveals an input-output analysis of expected and revenues and expenses. The revenue budget for a nursing unit may represent the patient care income expected for the budget period. The expense budget consists of salary and non-salary items. Among the factors that nurse managers might include in their operating budget are personnel salaries, employee benefits, medical and surgical supplies, drug and pharmaceuticals, office supplies among others. Expense budget should be comprehensive and thorough; it should take into consideration, all available information regarding the next year's expectations. Both controllable and non-controllable expenses are projected. Examples of non-controllable expenses include indirect NSS 412 HEALTH ECONOMICS 31 expenses like lighting, equipment depreciation. The non-controllable expenses and the probability of rises in materials and labour costs during the budgetary period need to be accommodated in the budget to provide for changes that are beyond the control of the organization or unit. SELF ASSESSMENT EXERCISE 3 List items or activities in your unit that can be under revenue and expense budget 3.3.2 Personnel Budget Personnel budgets estimate the cost of direct labour necessary to meet the agency's objectives. This budget is used as a guide to recruit, hire, lay off and discharge personnel. In developing the budget the nursing manager need to determine the level of need of nursing care that will meet the need of estimated patient population in its unit. The nursing manager will need to estimate number of the various cadres of nursing personnel required during what shifts, in what months and in which areas. Managing the salary budget is directly related to the manager's ability to supervise and lead the staff. In addition to anticipated salary expenses, peculiar expenses to nursing such as overtime, shift-duty, on-call expenses need to be budgeted for. Some information that will be helpful in budgeting will include; Current staffing pattern, number of vacant positions, previous years reports and performances, variety of patient cases, seasonal variation in patient load and disease burden. 3.3.3 Capital Expenditure Budget Capital budget is an important component of the plan to meet the organization's long term goals. Capital expenditures include physical changes such as replacement or expansion of the plant, major equipment and inventories. Organizations define capital items based on certain criteria; must have an expected performance of a least 1 year or at least cost a minimum of certain amount like equivalent of $500 or $ 1,000. Usually administrators establishes ceiling for capital budget and the nurse manger will need to prioritize requests if the request exceeds the available fund. Unfortunately in many developing countries nursing mangers are hardly involved in capital budgets. This is taken up by NSS 412 HEALTH ECONOMICS 32 hospital administrators at higher level though with some input from the nurse managers in form of selecting and determining the amount of equipment needed. 3.3.4 Cash Budgets Cash budget are planned to make adequate funds available as needed and to use any extra funds profitably. Cash budget ensures that the organization during the budgetary period has enough, but enough but not too much cash on hand. This is necessary because incomes do not necessarily coincide with expenditures and also seasonal variations should be anticipated which result in fluctuations in resource needs. If there is insufficient cash on hand purchase of needed resources will be hindered. If the budget is well planned, it will provide cash as needed and produce interest on excess fund. 3.3.5 Flexible Budgets Some expenses are unpredictable and can only be determined after change has commenced. Because of this it is necessary to have flexible budget. The changes can be compensated for by having periodic budget reviews. Sometimes variation in cost can be predicted through historical analysis of costs in previous budgets. Attendance of health facilities in many places in Nigeria drops significantly during festivities and in some cases

attendance of clinic is higher soon after workers receive salaries. These forms of variations require that budgets are made flexible. There are a lot of uncertainties in the Nigerian environment which makes flexible budget to be advantageous. 3.4 Advantages and Disadvantages of Budgeting Advantages of budgeting The advantages of budgeting include: Budget plans for detailed programme activities Help fix accountability by assignment of responsibility and authority State goals for all units, offer a standard of performance, and stress the nature of the planning and control process Encourage managers to have careful analysis of operations and to base decisions on careful consideration Minimize hasty judgments in decision making Can expose organizational weaknesses and allow corrective measures to be taken Resources can be projected and waste minimized NSS 412 HEALTH ECONOMICS 33 Financial matters can be handled in orderly fashion and activities of organizations ca be coordinated and balanced Disadvantages of budgeting The disadvantages of budgeting include: Only aspects of organization activities that are easy to measure are considered in budgeting as budget convert all aspects of organization performance into monetary values May become an end in itself instead of a means to an end. Particularly in situations where symptoms are treated as causes, it is important to find out the underlying reasons for the symptoms Budgetary goals may sometime supersede the organization's goals and gain autocratic control of the organization Danger of over-budgeting making the budget cumbersome and expensive Time consuming and expensive Require skill and experience for successful budgetary control Require forecasting but his can be uncertain because budgetary control is subject to human judgment, interpretation and evaluation 4.0 CONCLUSION Budgeting is an important component of a nursing manager's responsibilities. Budget can be seen as a plan for the allocation of resources and a control for ensuring that the results comply with the plans. The results are expressed in quntitative terms. Budgets are often associated with financial statements, such as revenues and expenses; they may also be in form of non-financial statements covering output, materials and equpment. There are various types of budget. All the types of budget can be put to use in the health sector and nurses need to have an unserstanding of budgets and the process of budgeting. 5.0 SUMMARY In this module you have read through and should be able to understand what budget is and the various types of budgets which include; operation budget, personnel budget, capital budget, cash budget and flexible budget. 6.0 TUTOR MARKED ASSIGNMENTS Discuss the advantages and disadvantages of bugeting in health care delivery. NSS 412 HEALTH ECONOMICS 34 7.0 REFERENCES/FURTHER READINGS Sullivan E.J., Decker P.J. (2005). Effective leadership & Management in Nursing (6th Edition). Pearson Prentice Hall, Pearson Education International, New Jersey. Tomey A.M. (2003). Guide to Nursing Management and Leadership (6th Edition). Mosby, Elsevier Science (Singapore) Pte Ltd. Singapore. NSS 412 HEALTH ECONOMICS 35 MODULE 2 Unit 1 Cost Containment in Health Care Unit 2 Poverty and Health Unit 3 Health Care Financing I Unit 4 Health Care Financing II Unit 5 Health Insurance UNIT 1 COST CONTAINMENT IN HEALTH CARE CONTENTS 1.0 Introduction 2.0 Objectives 3.0 Main Content 3.1 Cost consideration in health care 3.2 Cost containment in health care 3.2.1 Cost awareness 3.2.2 Cost monitoring 3.2.3 Cost avoidance 3.2.4 Cost reduction 3.2.5 Cost control 3.3 Ways to contain cost of health care 3.4 Cost containment in Primary Health Care 4.0 Conclusion 5.0 Summary 6.0 Tutor Marked Assignments 7.0 References/Further Readings 1.0 INTRODUCTION The objective of health care is to improve health status by reducing morbidity, postpone mortality and give people a higher quality of life. This can be achieved by promoting health, preventing ill health, curing ill-health when it has occurred, and enabling those whose conditions cannot be cured with existing knowledge to live a full life as much as possible despite their disabilities. All these is at a cost, it has to be

acknowledged that good health like most “goods” costs money. You can recall the various things that make up cost of health in Unit 3. Those who can afford to spend more on their health up to a point, seen to benefit the most. NSS 412 HEALTH ECONOMICS 36 The Health care market is one of a difficult market in economic analysis since ill-health determines the demand for health care services. The individual’s determination of ill-health is personal, emotional and can be uncertain. Health care is one of a subset of goods and services that provides both psychic and monetary benefits to consumer. The individuals demand for health care is derived from his perception of his optimal level of health. Demands for health care thus arise because the individual wants to bridge the gap between the perceived current health state and some higher health state that he desires. The individual then takes action to decide to seek health care. The need for health care and the demand for it is not the same, more so in developing countries. The cost of meeting this need and demand is enormous. Health for all by the year 2000 (HFA 2000) is at risk of remaining a dream without a careful consideration. A plan for health that does not take account of costs amounts to no more than window shopping. 2.0 OBJECTIVES The objective of this unit is for the reader to: Understand the need for providers of health care to be cost conscious Understand factors that contribute to resource inadequacy in developing countries Know about the various cost-containment strategies in health care delivery 3.0 MAIN CONTENT 3.1 Cost Consideration in Health Care Provision of health care is at a cost to individuals who make the demand and also the individuals, communities, government and nongovernmental agencies who supply it. Consumer health deals with the decisions individuals make in regard to the purchase and use of the available health products and services that will have a direct effect on their health. It involves economic or monetary aspects of health over which individuals have control. Consumer health includes selfmotivated or self-initiated actions. From this you know that health care often follow a demand from the consumer (patient). The fact is that it is no longer possible to meet the increasing cost of health care with the emergence of several new health risks and problems unless; health is built in among the priority economic objectives by NSS 412 HEALTH ECONOMICS 37 individuals, families, communities and government. It is desirable to increase accessibility to health services by either increasing people’s ability to pay or reducing costs. This can positively change health care seeking behaviour such that people benefit from early detection, diagnosis and treatment and ultimately reduce expenditure on chronic or complicated cases which is now usually the case in developing countries. Resources available for health care are not enough to meet the demand, it is therefore necessary to closely examine the main problems in the health sector that are contributory. These problems are mainly; allocation, internal inefficiency and inequity. Allocation Problem There is a problem in allocation of funds to health care particularly in developing countries. Private and public spending on health care in developing countries average $8 per capital in low income countries which represents about two-thirds of sub-Saharan Africa’s people and $16 per capital in middle income countries which represent nearly 30% of sub-Saharan Africa’s people and $68 per capital in the high income group of countries representing only one-twentieth of Africa’s population. Even though many developing countries have embraced Primary Health Care, current public and private spending on basic health services is inadequate. Private spending in these countries is substantial but little of it goes to low cost services which are more cost effective. In some countries, individuals expenditure on health account for over 70% of the total health expenditure. If the private and public resources tied up in hospital care are redirected to lower levels of health system, many of these health problems could be treated earlier at a less severe stage or prevented altogether and even at lesser cost. You can now appreciate from what you have just read that allocation problem exists even at individual level even though it is

commonly seen as a problem at government level. Rather people spend money on basic things that can promote or prevent health; they eventually spend illhealth that requires care at the level of a hospital. Allocation problem at the level of government is common in African countries. Government rather than spend appropriately on preventive health care which is cheaper end up spending on curative health care at higher level which is costlier. NSS 412 HEALTH ECONOMICS 38 Inefficiency Problem Inefficiency is common in health care delivery. One of the ways it occurs is the use of higher level facilities by patients who could well be served at less sophisticated units or facilities. It is common in developing countries for the high level facilities to be overcrowded with lengthy waiting times while other health facilities usually at the lower level have few patients. This result in delivery of unnecessary care through costly facilities and use of highly skilled personnel and because of the demand on the high level facilities, they are further expanded at some costs which certainly affects the lower levels. The supply of funds to the lower levels is thus further reduced. Inequity Problem Inequity is another important problem in developing countries. There is inequitable urban-rural distribution of benefits. About 70% or more of government spending goes to urban based care and in developing countries 70-90% of hospital clients live within 10kms to the facility they use therefore about 70% of people in the rural areas receive just about 30% of government health expenditure. There is also inequality in income; the poor who are at greater health risk have low income. SELF ASSESSMENT EXERCISE 1 What are the factors contributing to inadequacy of resources for health care in your own local area? 3.2 Cost Containment in Health Care Delivery The goal of cost containment is to keep costs within acceptable limits for volume, inflation and other parameters. It involves costs awareness, monitoring, management and incentives to prevent, reduce, and control costs. 3.2.1 Cost Awareness This focuses the health staff attention on costs of service delivery and the steps available for containing them. Health staff in developing countries are hardly know or get bothered about the ultimate cost of service to the organization and the consumers. An awareness of the cost can bring about a desire to see how such costs can be contained. NSS 412 HEALTH ECONOMICS 39 3.2.2 Cost Monitoring Is another measure in cost containment? Organizations providing health care can focus on how is to be spent, when, where and why. With answers to these, the cost of providing services can be monitored with the ultimate aim of checking where wastes can be reduced. Incentives can be provided to staff that have clear ideas and have demonstrated money-saving measures in their unit. 3.2.3 Cost Avoidance Where possible, cost avoidance for unnecessary procedures can be put in place to minimize expenditures on the part of the consumer and the organization. 3.2.4 Cost Reduction In health care delivery is desirable to contain health care cost. Preventive measures like childhood immunization can save a lot of cost in health care when compared to cost of managing the disase that would have been prevented. 3.2.5 Cost Control These can be very useful as a cost-containment strategy. Cost control is effective use of available resources through careful forecasting, planning, budgeting, reporting and monitoring. Cost-effectiveness entails comparing costs and identifying the most beneficial outcomes. This is done by, analyzing the alternative methods in achieving the same objective and then determine the cost implication of all inputs for each method. For each method the cost outcome and cost-effectiveness is determined. ____ SELF ASSESSMENT EXERCISE 2 What do you understand by the following terms? a. Cost awareness b. Cost monitoring c. Cost avoidance d. Cost reduction e. Cost control 3.3 Ways to Contain Cost of Health Care The main objective in cost cost-containment must be to realize the same benefits at lower cost and to increase benefits without adding costs. The NSS 412 HEALTH ECONOMICS 40 consumer and providers of health

care have roles to play in costcontainment. Consumers need to make rational use of health care service though they need to be assisted to do this in developing countries through adequate health information on the costs, consequences and quality of treatments, and the adequacy of competition between providers. Consumers need to be educated to use lower levels of health care where most of the health problems can be solved at reduced cost and referrals made to higher levels when necessary. Financial disincentives can also be used to discourage use of secondary and tertiary health care unnecessarily. For example if patients choose to go for treatment by-passing the lower level of care such patients can be made to pay more that someone who was referred from the lower levels. Other ways costs can be saved include: a. To ensure that the degree of technical complexity involved in the service delivery is appropriate to the task to be performed. b. Highly skilled staff not to be used on tasks that can be performed by lesser skilled staff. c. People should have positive health behaviour to maintain better health. d. Standardization of construction technology, equipments and drugs to the minimum acceptable standard and therefore relatively inexpensive level. Large sum of the health budget is spent on drugs; costs can be contained through rational prescribing and use of drugs. e. Using all resource to full capacity, avoiding waste by ensuring that they complement one another where possible and serve as many users as possible. f. Economy in procurement of resources of given characteristics. 3.4 Cost containment in Primary Health Care Lack of interest in cost analysis is a characteristic of the whole range of health activities particularly in developing countries. It is particularly pronounced in primary health care, probably because of the diversity of the activities involved. In developing countries the only health services that can be expected to reach the entire population, are those that are of low cost. The largest element of cost in health services is staff and the least expensive way to NSS 412 HEALTH ECONOMICS 41 do this is through community participation in which people provide some of the services themselves where possible. SELF ASSESSMENT EXERCISE 3 List ways cost of health care can be contained. How is this applicable to the nursing profession? 4.0 CONCLUSION Providing health care is at a cost, this is increasing in all nations and resources of most countries particularly developing countries are scarce. Also health has to compete with other needs for the scarce resources of individuals, communities and nations. It becomes apparent that cost of health care has to be controlled with efficiency. Consumers and providers of health care need to be cost conscious. Cost saving measures, are required to be put in place in the health sector while at the same time striving to provide quality health care for the populace. It is important that all health care providers are made to be cost conscious, to ensure that services do not cost more than absolutely necessary, so that more people can be reached with health care. 5.0 SUMMARY Health care in developing countries continue to increase in demand even though the demand is less than the health care need. The resources available are not enough, and are not likely to be enough to meet the increasing health problems. The economic depression and inadequate management of resources in developing countries has made supply of health care in its various forms grossly inadequate; cost of heath care to individuals, government and agencies is increasing. It is therefore necessary for providers and consumers to be cost conscious with the ultimate aim of cost containment in health care. It is necessary to increase general awareness on costs of health care, so that cost saving measures can be practiced widely and through this increase affordability and coverage of health care in developing nations. This unit dealt with various cost saving measures which you need to be familiar with and consciously practice to contain cost on health care. NSS 412 HEALTH ECONOMICS 42 6.0 TUTOR MARKED ASSIGNMENTS 1. Explain the following terms: a. Cost awareness b. Cost monitoring c. Cost avoidance d. Cost reduction e. Cost control 2. Write an essay on cost containment in health care in developing

countries. 7.0 REFERENCES/FURTHER READINGS Abel-Smith B (1986). Paying for health for all. World Health, The Magazine of the World Health Organization, May: 4 – 6. Abel-Smith B and Leiserson A. (1987). Making the most of scare resources. Health care – Who pays: World health Forum reprint: Geneva: 13 -22 Abel-Smith B. (1984). Improving cost effectiveness in health care. World Health Forum: Vol. 5: 88-90. Akande T.M. (1998). Cost consideration in health care in developing countries. Ilorin Doctor Vol 3. No 1: 4 – 9. Andres, C. (1992). Health is Wealth “but also Wealth is Health” World health. The Magazine of the World health Organization: Nov – De. Geneva: 2- 10. Carr-Hill R. (1994). Equity for the poor, Health care tomorrow, World health. The magazine of World health Organization: Vol5, Geneva: 22 – 23. Cornacchia, H and Berret S. (1982). Shopping for Health Care. Mosby Press, New York: 4 – 22. NSS 412 HEALTH ECONOMICS 43 UNIT 2 POVERTY AND HEALTH CONTENTS 1.0 Introduction 2.0 Objectives 3.0 Main Content 3.1 Definition of Poverty 3.2 Health problems and the economy 3.3 Improved economy leading to improved health 4.0 Conclusion 5.0 Summary 6.0 Tutor Marked Assignments 7.0 References/Further Readings 1.0 INTRODUCTION Some two-third of the world’s population go to sleep hungry at night. The world Bank estimated that perhaps as much as one-quarter of the world survives on no more than $1 (about N130.00) per day. Outright famine regularly occurs in various parts of the world. Recent examples of this, is the mass starvation of an estimated 1 million people in Ethiopia during the drought of 1984 – 1985, the catastrophes in Asia. This people had little access to health care, they live in unsanitary environment, infant and child mortality is high and life expectancy is low. Poverty is related to the economic activities of the country. There is no society that has the resources necessary to produce enough goods and services that will satisfy all wants and desires of its people. The production of goods and services within an economy can be measured by the Gross Domestic Product (GDP). Gross Domestic Product is the measure of all final goods and services produced within an economy during a year. Countries with low GDP among other causes have problem of poverty, though in some countries with high GDP poverty can be found “poverty amidst plenty”. Poverty creates ill-health because it forces people to live in environments that make them sick, without decent shelter, clean water or adequate sanitation. NSS 412 HEALTH ECONOMICS 44 SELF ASSESSMENT EXERCISE 1 i. What is Gross Domestic Product? ii. Find out the GDP for 10 countries and relate it to their standard of living. 2.0 OBJECTIVES In this unit you will be required to: Define poverty and understand basically why the poor have illhealth problems. Understand the relationship between economy and health problems. 3.0 MAIN CONTENT 3.1 Definition of Poverty Poverty is concerned with the relationship between the minimum needs of people and their ability to satisfy those needs. Poverty can be difficult to define because of the relative meaning of minimum needs. The United Nations uses living on less than $1 (N130.00) per day to define poverty. The poor are at greater risk of becoming ill. Poor health has adverse effects on productivity which further contribute to poverty. Poverty affects access to health services. Poverty also limits ability to meet the cost of health care. The poor have worse health outcomes than other economic and social groups. Infant, child and maternal mortality rates are higher in poor communities. SELF ASSESSMENT EXERCISE 2 From the above list 5 ways poverty affects health 3.2 Health Problems and the Economy Major causes of death and illness – Perinatal, infectious, and parasitic illnesses are responsible for 75% of infant deaths. This illnessess can largely be attributed to poverty. Infectious diseases and parasitic diseases are responsible for 71% of deaths of children aged one to four NSS 412 HEALTH ECONOMICS 45 and 62% of deaths in children aged five to fourteen. The typical African child under five years has five episodes of diarrhoea per year, it also accounts for 25% of all childhood illness and 15% of admissions in health

facilities. Vaccine preventable diseases are implicated in the deaths of 20% of all children in Africa. Maternal mortality rates in Africa are higher than anywhere else in the world. SELF ASSESSMENT EXERCISE 3 If people are not poor, list ways they would avoid the situation described above? The heavy burden of ill-health in Africa is a reflection of the level of poverty in the continent.You need to know that the effect of poor health goes beyond physical pain and suffering; Learning is compromised, returns to human capital diminish, and the environment for entrepreneurial and productive activities is constrained. Poor health imposes immense economic costs on individuals, households, and society at large. Household survey in Cote d'Ivoire showed 24% of the adult labour force experienced an illness or injury in the previous month to the study, 15% became at least temporarily inactive. The workers on average lost nine full days of work and the cost of treating them amounted to 11% of their normal monthly earning. In Nigeria, Guineaworm disease temporarily incapacitated 2.5 million Nigerian in 1987. Cost/benefit study revealed the net effect of the disease was to reduce rice production by 50 million dollars and it was estimated that the benefits of a worm control program would exceed its costs only after 4 years. These studies show you how ill-health further worsens sufferers' economic state. In view of the demonstrated importance of human capital to economic progress, a country can not attain high level of economic development with a population burdened by high infant and maternal mortality, pervasive illness of its workforce and low life expectancy. Economic status of an individual, community, and country is related to the health of the individual or its people, though wealth does not necessarily bring health. A buoyant economy can create the enabling environment for health. A poor economy show features of poor housing, inadequate food and nutrition, poor water supply, inadequate environmental sanitation, and low level of education, low affordability of health care. NSS 412 HEALTH ECONOMICS 46 AIDS is a cause of deaths and Illness in developing countries which has heavy toll on economy of countries. Prevalence of AIDS in sub-Saharan Africa countries remains high. In hard-hit African countries the active age group is most affected. Deaths in this age group affect skilled manpower and professionals which take a heavy toll on countries. Malaria is endemic in most of sub-Saharan Africa and it appears to be worsening in much of Africa and results in high childhood morbidity and mortality. The cost of treatment of malaria in most countries when put together is enormous. This money would have helped families, communities and the country at large to improve on quality of life. Absenteeism from work among adults affected by malaria is also high, this affects productivity. From the examples described you can appreciate how poor health imposes immense economic cost on individual and the nation. Some Health Effects of Poverty Poverty creates hunger which in turn leaves people vulnerable to diseases. 1 Poverty denies people access to reliable health services and affordable medicines Denies people access to prevent health care. For example it denies poor children access to immunization. Proverty creates illiteracy which eventually make people less informed about health risks Force people to live in enviroenments thatmake them susceptible to certain diseases One of the barriers to health care for the poor is the time it takes to get treatment. Time is a resource since the time taken away from work may mean lost income. SELF ASSESSMENT EXERCISE 4 Now improve on exercise 2, List ways poverty can affect health of a person. 3.3 Improved Economy Leading To Improvement In Health Economic developments will provide enabling environment that will reduce disease burden and deaths in the following ways: NSS 412 HEALTH ECONOMICS 47 Safe water and sanitation: Poor sanitation and lack of safe water contributes immensely to morbidity and mortality in developing countries. Studies have shown that improvement in excreta disposal reduced diarrhoea morbidity by 22 – 36%. Food and Nutrition: Malnutrition underlies more than one-third of infant and child mortality in rural and urban areas of many African countries. Inadequate quality and quantity of

food intake causes growth failure, decreased immunity, learning disabilities and reduced productivity. Increase in income of poor families is likely to lead to increased food consumption. Countries with strong economy are likely to provide an environment where its citizens get good income that can help improve household food security. Housing: Some diseases in developing countries are attributable to poor housing. Poor housing results in overcrowding, poor environmental sanitation, poor ventilation, cohabiting of man and animals among others. Education: Countries with good economy are likely to invest in education. Education of people, particularly female education usually brings about informed choice and right decision that relates to individual's health or family health. Educated women marry and start having children later, make better use of health services, and make better use of information that will improve personal hygiene and health of their children. Health infrastructure and equipment: Countries with buoyant economy are likely to incest in health infrastructure and equipments. Where there is wide coverage of the population with health facilities, geographical access to these facilities can improve on the health of people. Physical proximity to health facilities is only the beginning of effective health care coverage. A facility that is near people's homes will have little value if it lacks basic equipment. Money is needed to procure necessary equipment and for maintenance of these equipments. 4.0 CONCLUSION As good health is crucial to protect the family from poverty, so is better health is central to poverty reduction. Improving the health of the poor must become a priority, not only for public health but also for other NSS 412 HEALTH ECONOMICS 48 sectors of development. The best cure for the various infectious diseases that plague developing countries is economic growth and broad-based development. 5.0 SUMMARY In this unit you have been able to read about the effect of poverty on illhealth and how ill-health can also precipitate poverty. At the levlel of nations you now see that illness reduces productivity of countries and can therefore affect the economy of such countries. It is also true that economic development proveides enabling environment to reduce poverty and also reduce some illness. 6.0 TUTOR MARKED ASSIGNMENTS 1. Discuss the relationship between poverty and ill-health 2. Describe how improved economy can lead to improved health 7.0 REFERENCES/FURTHER READINGS A.M., Register C.A., Grimes P.W. (2000). Economics of Social Issues. 14th Edition McGraw-Hill. USA Drummond M.F. (2005) Methods for the economic evaluation of health care programmers, Oxford University Press, ISBN 0-19-852945- 7. http://www.cms.hhs.gov/TheChartSeries/downloads/private_ins_chap4_ p.pdf WHO/World Bank. Dying for change. Poor peoples experience of health and ill-health. World Bank (1994). Development in Practice Better Health in Africa: Experience and Lessons Learned. The International bank for Reconstruction and Development/The World Bank. NSS 412 HEALTH ECONOMICS 49 UNIT 3 HEALTH CARE FINANCING I CONTENTS 1.0 INTRODUCTION You will remember that in Unit 2 we described the role health plays in the socio-economic development of any nation. Health is no longer and cannot therefore be regarded as a by-product of economic development but a pre-condition for it. Most often government is viewed as ultimately responsible for the population's health. There is a growing financial need to fund health care in almost all nations, with resources becoming limited because of the global economic recession, health financing now take a major focus of attention. Health costs have been increasing because of the aging population with increased health care needs, increased use of technology, new and expensive treatment modalities and increasing administrative costs. SELF

ASSESSMENT EXERCISE 1 List reasons for increasing cost of health care in this country. NSS 412 HEALTH ECONOMICS 50 2.0 OBJECTIVES On completion of this unit, the learner should be able to: Know what health care financing is Describe the major options in health care financing which will include direct government financing, user charges, community financing in this unit. 3.0 MAIN CONTENT 3.1 Options in Health Care Financing Options for financing health services are now being widely considered. We can broadly divide health care financing into two namely; Public and Private. Examples of public health financing include; direct government funding, social insurance while examples of private health financing include; user fees, private health insurance, community financing and donations. They may be grouped into 5 major categories: Direct government financing, User charges (Out-of–pocket expenses), Community financing, health insurance, Donors (foreign aid). 3.1.1 Direct Government Financing Direct government financing of health activities is the most widespread approach to health financing in the developing world. Government either provides periodic allocations from general government revenues or assigns the proceeds of a designated tax to the health sector or both. Because national governments are responsible for overall health policy and strategic planning for health, it might be assumed that governments are also the major sources of healthcare financing and health expenditures. We know in reality that government's share of total health expenditure varies widely all over the world. Public revenues are obtained from various sources and then generally are added together, in which case the source of financing for a particular public program cannot be identified. However, in some cases governments dedicate the proceeds of a particular tax instrument to the health sector. For example in several countries in the Americas and in Asia, lotteries have been organized to benefit social welfare programs such as health care, primary education, etc. Direct government funding of health activities alone has been inadequate in many countries particularly in developing countries. The NSS 412 HEALTH ECONOMICS 51 World Health Organization (WHO) recommends that all levels of government should allocate at least 15% of their total budgetary expenditure to health care. You know that in Nigeria, government financing of health care is inadequate. Reasons why African governments have committed less money to health than other countries include: Economic condition of some of the countries, since the expenditure on health in these countries is largely from general tax revenues, including duties on imports and exports Structural Adjustment programmed in some of the countries which is responsible for cutbacks in government expenditure on social services Some countries spend heavily on other sectors like defense to the detriment of the health sector whereas there is little evidence that defense expenditures contribute positively to economic growth or sustainable development. SELF ASSESSMENT EXERCISE 2
2 Do you consider government expenditure on health in Nigeria adequate? If No, List the things that make you consider expenditure on health by government inadequate. 3.1.2 User Charges (Out-Of-Pocket Expenses) User charge is also known as out-of –pocket expenses. Another way of financing health care is by charging patients. These charges take a variety of forms. Fees for medical services are diverse. The definition of the item on which fees is to be charged varies widely. A fee may be required for an encounter with the health care provider, an episode of illness or a fixed number of contacts with the health care system. A single encounter may be broken into items like laboratory test, drugs, procedures, etc. The fees for each of this vary. There may be a uniform priced charged for all the patients or with the exception for the poor, children or some are exempted from paying. In some places, there are sliding scales of rates applied such that persons of lesser means pay lower fees. User charges have the advantage of providing a link between financial responsibility and the provision of services. This link has generally enhanced willingness to contribute to the cost of health programs and NSS 412 HEALTH ECONOMICS 52 has encouraged both

consumers and providers to be cost conscious. In addition user charges help to control the use of health services by imposing financial disincentives to consumers. You know that when people pay for a service they are careful since it costs them something but if they do not pay then they may not be bothered about careful use of such service. When user fees are low or not practiced, consumers have no reason to pay attention to costs. User fees are also a tool for reinforcing the referral system. In some countries people who are not referred from the lower levels are made to pay more than those referred. User fees are becoming increasingly common in Africa. This method of cost recovery directly addresses the problem of under-funding of government health facilities. The administration of user charges throws some challenges in developing countries where it is observed that the largest reduction in the use of services is as a result of charges for health services particularly among the poor. You are familiar with this problem of the poor who are not able to afford health care because of user fees. This then call to question the need for equity. However, some people are of the opinion that user fees that result in availability of services is better and more people are cared for than a free health service with services not available because money is not available. Important arguments in favour of user charges include: Fees make the patient more conscious of the services they ask for, it therefore strengthens self-caring User fees however small will make up some level contribution to the health financing. Keep services running and improves quality of care and confidence in the services Arguments not in favour of user fees include: Fees collection and its management requires management capabilities which may not be available at some lower levels of health care delivery Revenues collected in some instances are not substantial compared to cost of providing services Introduction of user charges reduces utilization rates SELF ASSESSMENT EXERCISE 3 List the advantages and disadvantages of user fees as an option in health care financing. NSS 412 HEALTH ECONOMICS 53 User charges can lead to greater use of health services where there is: Phased in rather than sudden increase in prices (Gradual introduction of fees) Greater accountability of the provider to the population – where consumers find that quality of service received is justified when compared with fees paid. Local management of resources (decentralized system) If patients perceive they will have higher quality of care Service received can compete favourably with services elsewhere Garland defined three relations between charging for health services and the population: a) Contributive capacity – This is defined as the money an average family can spend for health in a defined period. This varies widely, some studies in rural households' show that the share of the budget households allocate for health ranges between 2.5 – 6.5%. b) Financial capacity – This is defined as the availability of cash by the respective household, in that very moment when cash is needed for medical treatment. It is known that financial capacity increases after food harvest, at month ends when salaries are paid. It is also common observation in some developing countries that financial capacity decreases after major festivities like Christmas and Sallah. However in Africa, the potential family solidarity in the event of ill-health is high which translates to some form of assistance. c) Institutional relationship – Target families and communities can organize and have some relationship to provider of health service. It can be in form of financial contributions from users. This can provide solutions for those who can not pay immediately and those who can not pay at all. NSS 412 HEALTH ECONOMICS 54 Source – World Health Organization NSS 412 HEALTH ECONOMICS 55 3.1.3 Community Financing The emphasis of community support in most developing countries has been on providing resources, either financial or material and human for the establishment or improvement of health and sanitation infrastructure e.g. Health facilities, latrines, wells, etc. Community financing of health activities requires community

organization. The most serious problems have arisen in trying to sustain contributions to pay for the recurrent costs of programs. People have frequently been unwilling to continue to pay for programs from which they were not benefiting at the time. Greater reliance on community financing off health care has been advocated for several reasons, which include: Individuals / households spend a lot of money purchasing modern and traditional health care from the private sector. It would not be additional burden if this expenditure were redirected towards services that have a greater impact on health. Community financing will attract other unexploited resources like labor, land and contributions in kind. People will readily use and cooperate with services that they have helped to create and later help to maintain. It is a suitable mechanism for mobilizing contributions from the self- employed. Community financing cover the following: Paying at full or preferential rates for health facilities organized through community efforts. The crucial feature is that the community rather than established market forces or individual negotiation has approved this form of payment. Paying for socially organized voluntary community insurance schemes e.g. prepayment for services that may be linked to income or production or a health care scheme for which standard charges are laid down. Giving of gifts in cash, labor, or kind for which no wholly individual benefit is expected but from which the donor may partake of the collective benefits. Paying for the creation and utilization of community capitalization schemes for the promotion of health care such as nutrition and sanitation funds from which grants or loans are given to members for health related activities. ____ SELF ASSESSMENT EXERCISE 4 List the benefits of community financing of health. 4.0 CONCLUSION There are various forms of health care financing mainly public and private. Health care financing options vary form one country to the other. There can be variations even within countries. Government alone can no longer bear the total cost of health care; hence other options of health care financing are getting some attention. Each of the options in health care financing has its merits and demerits. In this unit the options of direct government financing, user-fees and community financing have been discussed. 5.0 SUMMARY In this unit you have been able to go through the major options in health care financing which include; direct government financing, user charges (out-of-pocket expenses), health insurance, community financing, You have also been able to see the advantages, disadvantages of each option of health care financing discussed in this module. 6.0 TUTOR MARKED ASSIGNMENTS Discuss user fees as an option in health care financing and what are the advantages and disadvantages of this option. 7.0 REFERENCES / FURTHER READINGS Financing District Health Services. International Workshop held 11th – 15th April 1994 in Nairobi Kenya. Published by GTZ Eschborn, Germany. GTZ (Deutsche Gesellschaft fur Technische Zusammenarbeit) Workshop Report. http://www.paho.org/English/DD/PIN/ptoday18_sep05.htm World Bank (1994). Development in Practice Better Health in Africa: Experience and Lessons Learned. The International bank for Reconstruction and Development / The World Bank. UNIT 4 HEALTH CARE FINANCING II CONTENTS 1.0 INTRODUCTION You will remember that in Unit 8 we described the importance of health care financing and looked at some of the options in health care financing like direct government financing, user fees (out-of-pocket expenses) and community financing. In this unit other options in health care financing which are equally important will be discussed. SELF ASSESSMENT EXERCISE 1 What are the options in health care financing discussed in unit 8? What other options do you know of apart from those discussed in unit 8? 2.0 OBJECTIVES On completion

of this unit, the learner should be able to: Know what health care financing is Describe the major options in health care financing which will include direct government financing, user charges, community financing in this unit. NSS 412 HEALTH ECONOMICS 58 3.0 MAIN CONTENT 3.1 Health Insurance Health insurance is a system in which prospective consumers of care make payment to a third party in the form of an insurance scheme, which in the event of future illness will pay the provider of care for some or all of the expenses incurred. Health insurance is a mixed source of finance as it often draws contributions from both employers and employees and sometimes government. Contributions to such schemes are often mandatory. There are three main types: Government or social insurance – maybe compulsory or voluntary often employed in the formal sector. Contributions based on individuals income not on actual risk Private insurance – coverage through third-party payer institutions. Employer based insurance- employers or parastatal or private bodies serve as the third party payer or collection agent. Health insurance diversify sources of revenue of the health sector, individuals play some role in paying for their own health care and to spread the burden of health costs over time and across a wider population which will reduce risk. A variety of insurance mechanisms can be used to help finance the health services rendered to individuals and families. These entails collection of funds directly from potential users of the health care system, either to pay the providers for their services or to reimburse users in full or in part for payments made to providers. Membership of health insurance scheme can be voluntary or compulsory. Government, statutory agencies, profit making organizations, or non-profit making organizations such as, cooperatives or benevolent societies can operate these schemes. The insuring agency may employ the providers of health care and own facilities (the direct method) or contract with health care providers – public or private (the indirect method). The advantage of insurance is that it converts unpredictable future health expenses into payments that can be budgeted for in advance. The agreements convert large, infrequent and unpredictable expenditures into smaller, periodic payments. These payments are collected to a pool of resources that can be drawn upon to meet the needs of a participant who encounters misfortune of ill-health. NSS 412 HEALTH ECONOMICS 59 Nearly all developed countries that now provide the same right to health care to the whole population went through an evolutionary stage of voluntary followed by compulsory health insurance. Compulsory insurance – These schemes are generally financed by employers and or employees contributions calculated as a percentage of pay roll. Compulsory insurance schemes may cover the self-employed as well on a compulsory or voluntary basis. However, it is extremely difficult even in developed countries to collect compulsory contributions from the self-employed. Voluntary insurance – People may be allowed to be voluntary contributors to a social security scheme, run by government or statutory agencies, which is compulsory to others. Alternatively they may insure with profit or non-profit agencies or they may join a group scheme. Insurance schemes typically require the patient to make an initial payment for care (“deductible”) before applying for benefits and many also require the patient to pay a small share of the additional amount (“co-payment”) – these two devices are intended to discourage overuse of health care services. Some insurance programmed have set standard rates for common procedures, and have defined a limited number of “services” for which payment will be made. These moves are intended to control the claims against the insurance fund. 3.2 Foreign Aid Donors are important financiers of health care in Africa; especially where the government has been unable to meet health needs due to revenue shortfalls. During the 1980s bilateral donors accounted for 62% of total health assistance in Sub-Saharan Africa, while multilateral agencies provided 32% and non-governmental agencies 6%. External financing is generated mostly through

development–oriented institutions such as bilateral agencies, multilateral organizations and banks e.g. UNICEF, WHO, UNDP, World Bank, EEC, and USAID etc. Financial cooperation is generally channeled through a central authority in the recipient country such as Ministry of Finance or Ministry of National Planning. In some cases funds may be routed directly to particular ministries, agencies or NGOs. While NGOs in financial terms may be small in most cases, their potential for mobilizing people and strengthening their self-reliance cannot be overlooked. Foreign Aid has played invaluable role in public expenditures in developing countries but has some negative effects like: Emphasis on vertical programmers NSS 412 HEALTH ECONOMICS 60 Sustainability problem Priority program often determined by donors and not recipient countries Some donor funding of programs are out of proportion to total health needs Poor coordination of efforts by various external agencies involved in funding of the programmers. SELF ASSESSMENT EXERCISE 2 i. List some organizations providing foreign aid in health in your locality. ii. In what form are these aids financing health care? 3.3 Voluntary contributions These are contributions usually from individuals or groups within the country. Philanthropists may make cash donations and/or donations in kind (buildings, equipments, etc). Religious groups also fall into this category. Some groups run non-profit making health services. Other private sector involvement Medical services run for employees by private or quasi- government enterprises. Salaried government physicians engaged in private practice Physicians engaged in full-time private fee for service practice Chemist shops/Pharmacies Private for profit hospitals and clinics Indigenous or traditional practitioners and quacks The above are some forms of health care financing which my be profit oriented but then contributing immensely in some ways in financing of health care 4.0 CONCLUSION There are various forms of health care financing mainly public and private. Health care financing options vary form one country to the other. There can be variations even within countries. Government alone can no longer bear the total cost of health care; hence other options of health care financing are getting some attention. Each of the options in health care financing has its merits and demerits. NSS 412 HEALTH ECONOMICS 61 5.0 SUMMARY In this unit you have been able to go through the major options in health care financing which include; health insurance, foreign aid and voluntary contributions (philanthropists). 6.0 TUTOR MARKED ASSIGNMENTS Describe the options in health care financing 7.0 REFERENCES/FURTHER READINGS Financing District Health Services. International Workshop held 11th – 15th April 1994 in Nairobi Kenya. Published by GTZ Eschborn, Germany. GTZ (Deutsche Gesellschaft fur Technische Zusammenarbeit) Workshop Report. http://www.paho.org/English/DD/PIN/ptoday18_sep05.htm World Bank (1994).
2 Development in Practice Better Health in Africa: Experience and Lessons Learned. The International bank for Reconstruction and Development / The World Bank. NSS 412 HEALTH ECONOMICS 62 UNIT 5 HEALTH INSURANCE CONTENTS 1.0 Introduction 2.0 Objectives 3.0 Main Content 3.1 Definition of health insurance 3.2 History and evolution of health insurance 3.3 Types of Health Insurance Scheme 3.3.1 Private 3.3.2 Public Insurance 3.3.3 Social 3.3.4 Community Health Insurance 3.3.5 Direct 3.3.6 Indirect 3.3.7 Reimbursement 3.4 Problems with health insurance 3.4.1 Problem with health insurance 4.0 Conclusion 5.0 Summary 6.0 Tutor Marked Assignments 7.0 References/Further Readings 1.0 INTRODUCTION Everyone no matter how healthy needs medical care at some point in time. This may be in form of preventive care or treatment for sicknesses and injuries. With medical care comes payment of fees in one form or the other. Affordability of such fees at the point of use may be difficult. Health insurance provides a form of financing which make payment for the fees relatively easier. Health insurance is an institutional and financial mechanism that helps households, individuals and organizations to set aside financial resources to meet

costs of medical care in the event of illness. The advantage of insurance is that it converts unpredictable future expenses into payments that can be budgeted for in advance. From this you will observe that health insurance scheme option in health care fianancing significantly differs from user-fees which in some places are described as 'cash and carry'. NSS 412 HEALTH ECONOMICS 63 2.0 OBJECTIVES The learner through this unit is to; Understand what health insurance scheme means Know the various types of health insurance sheme Know some of the problems that can be encountered in health insurance scheme 3.0 MAIN CONTENT 3.1 Definition Of Health Insurance Health insurance is a system in which prospective consumers of care make payment to a third party in the form of an insurance scheme, which in the event of future illness will pay the provider of care for some or all of the expenses incurred. Health insurance is a type of insurance whereby the insurer pays the medical costs of the insured if the insured becomes sick due to covered causes, or due to accidents. The insurer may be a private organization or a government agency. Health insurance is an agreement between a person, who is called the policy holder, and an insurance agent. Insurance agents or carriers are organizations that offer financial protection in case of illness or injury and pays for the policyholder's medical treatment. The fundamental concept of health insurance is that it balances costs across a large, random sample of individuals. For instance, an insurance company has a pool of 1000 randomly selected subscribers with each paying N1000.00 per month. Fifty of them get really sick that month while the others stay healthy, which means the insurance company, can use the money of the paid by the healthy people to treat the sick persons. STRUCTURE OF HEALTH INSURANCE MEMBERS PROVIDER INSURANCE AGENT (POOL OF FUND) Premium Services Payments NSS 412 HEALTH ECONOMICS 64 ____ SELF ASSESSMENT EXERCISE 1 Briefly describe the concept of health insurance scheme 3.2 History And Evolution The concept of health insurance was proposed in 1694 by Hugh the Elder Chamberlen from the Peter Chamberlen family. In the late 19th century, early insurance was actually disability insurance that covered cost of emergency care for injuries that could lead to disability. This continued until the 20th century where all laws in some jurisdictions in US regulating health insurance actually referred to disability insurance and patients were expected to pay for all other costs of medical care in a form of fee for service. Today health insurance schemes cover a wider area of health care to include the cost of routine, preventive, and emergency health care procedures. The origin of health insurance can also be traced to medieval Europe when labour unions, associations of employers of labor and craftsmen formed guilds which in turn created funds to help members in times of need on account of illness. Although they started with cash benefit they later broadened the scope to request doctors to certify illnesses and paid them to provide health care for members. New incentives then came from employers with the scheme becoming compulsory as employers in specific high-risk industries such as mining, began to make employment often tied together with willingness to pay contributions. With these came the development of earnings-related contributions rather than risks-related contributions. This potential for such solidarity was exploited in Germany in 1883, Austria in 1887, Norway in 1902 and the UK in 1910. By the early 1930s compulsory health had been developed in most industrialized countries of Europe under the name of sickness and maternity insurance. SELF ASSESSMENT EXERCISE 2 Write a short essay on the history of health insurance. NSS 412 HEALTH ECONOMICS 65 3.3 Types of Health Insurance 3.3.1 Private Health Insurance Private health insurance is a contract between an insurance company and the customer and in the private sector. Private insurance can be for groups like companies, labour unions, professional association or for individuals. Private: This is through employer owned on-sight

health facilities or through contract with outside providers, contribution payable is based strictly on the needs of the individual i.e. the higher the health needs of the contribution the higher the payment. 3.3.2 Public Health Insurance The public sector third party may be Parastatals, insurance scheme, government, and social security and sometimes the providers.With the publicly funded health insurance the good and the bad risks all receive coverage without regard to health status, which eliminates the problem of adverse selection and amplifies the problem of moral hazard. 3.3.2 Social Insurance Insurance program financed by government through tax revenues that guarantee citizens financial benefits for events which are beyond individual control, such as old age, disability and poor health. Payment is irrespective of the needs and is usually based on employment and income. Based on the principle of solidarity Contribution based on ability to pay Resources are pooled together among a large population It enhances security of each individual in the group. Higher income earners will subsidize those with lower income and those with lower health needs will subsidize those with higher health needs. 3.3.4 Community Sponsored Insurance A community based program which normally operates in the rural areas and mostly localized e.g. health care scheme in Thailand, Tsonga in Kwara State, Nigeria. NSS 412 HEALTH ECONOMICS 66 Other types of HIS include 3.3.5 Direct Here the Health Insurance Scheme builds or rents its own health care premises exclusively for the use of the insured persons. 3.3.6 Indirect Here the scheme makes contracts with selected providers for the provision of defined services at negotiated prices, the authority rather than the insured persons makes the payment. 3.3.7 Reimbursement The patient buys his own medical care in the private market and then sends the receipted bills to the insured who reimburses the insured person either for part of the full cost or on the basis of standard payment for a particular service which will normally be well below the prices actually paid. SELF ASSESSMENT EXERCISE 3 List the types of health insurance scheme and explain each type briefly 3.4 Problems Of Health Insurance Include: Increasing cost of health care Some private insurance companies charge people at different rates based on their own personal health Some medical problems may not be covered by the scheme Health care recipient is not involved in negotiating the cost of care. Some health care providers have popular and unpopular ways of controlling these costs. Some providers may have different rates for the same procedure for those insured and those not insured. 3.4.1 Problems With Private Health Insurance There two main problems and these are adverse selection and moral hazard. NSS 412 HEALTH ECONOMICS 67 Adverse selection - Describes the tendency for only those who will benefit from insurance to buy it or participate in it. Adverse selection can leave an insurance company with primarily sick subscribes and will have the problem of balancing out the cost of medical
2
expenses with a large number of healthy subscribers. This is because unhealthy people are more likely to purchase health insurance because they anticipate heavy medical bills whereas those who consider themselves to be healthy may decide that medical insurance is an unnecessary expense; if they see a doctor once in a year and it costs N500.00, that much better than making monthly insurance of N600.00. The insurance companies too can deny those with medical history suggestive of a future a heavy financial burden may be denied or screened out. Moral hazard – Describes the state of mind and change in behaviour that results from the knowledge the health insurance will take care of medical bills and people therefore overuse medical care since they do not incur out-of –pocket expenses. Where health insurance is in practice, people who do not have insurance cover or are under-insured may wait for too long out of fear of high medical bills until the illness become life-threatening. SELF ASSESSMENT EXERCISE 4 Describe the observed and likely problems of health insurance scheme from your view of our health system. 4.0 CONCLUSION Health insurance is an option of health finacing that is used in most developed countries and

increasing number of deveoping countries are also practising health insurance scheme. It converts unpredictable future expenses into payments that can be budgeted for in advance. There are various types of health insurance scheme. The scheme now appear to be a sustainable way of financing health care and reduces the problem of 'cash and carry' health financing and this to a large extent reduces the emergency financial burden when household need to utilize health care. 5.0 SUMMARY This unit has given you a definition of health insurance and described the various types of health insurance. They include private and public health insurance, direct and indirect health insurance, social insurance, community health insurance and reimbursement health insurance. The various problems that can be encountered in health insurance scheme are NSS 412 HEALTH ECONOMICS 68 described in this module. Also described are the two main problems in private health insurance which are; adeverse selection and moral hazard. 6.0 TUTOR MARKED ASSIGNMENTS 1. Describe the various types of health insurance scheme 2. What are the common problems of private and public health insurance scheme? 7.0 REFERENCES / FURTHER READINGS Financing District Health Services. International Workshop held 11th – 15th April 1994 in Nairobi Kenya. Published by GTZ Eschborn, Germany. GTZ (Deutsche Gesellschaft fur Technische Zusammenarbeit) Workshop Report. uhttp://www.paho.org/English/DD/PIN/ptoday18_sep05.htm World Bank (1994). Development in Practice Better Health in Africa: Experience and Lessons Learned. The International bank for Reconstruction and Development / The World Bank. NSS 412 HEALTH ECONOMICS 69 MODULE 3 Unit 1 Health care financing in Nigeria Unit 2 National Health Insurance Scheme in Nigeria Unit 3 Strategies for implementation of NHIS in Nigeria Unit 4 Economic evaluation of health programs UNIT 1 HEALTH CARE FINANCING IN NIGERIA CONTENTS 1.0 Introduction 2.0 Objectives 3.0 Main Content 3.1 National Health Policy on Health Care Financing 3.2 Health Financing by tiers of Government 3.3 Options in health care financing 3.4 Health care expenditures 4.0 Conclusion 5.0 Summary 6.0 Tutor Marked Assignments 7.0 References/Further Readings 1.0 INTRODUCTION Health is fundamental to the socio-economic development of any nation. Nigeria like many other countries have its people health funded by government, but as result of the inadequacy of government funding several other options in health care financing are also in place. All tiers of government are involved in health car financing even though the level of health they fund differ. The proportional allocations of money to health sector out of the total budgetary expenditure by these tiers of government vary considerably. Effective use of the meager financial resources available to the health sector in Nigeria remains a problem and challenge. OBJECTIVES In this unit learners are expected to: Understand the what the National Health Policy is on Health Care Financing NSS 412 HEALTH ECONOMICS 70 Know about the various roles of the different tiers of government in Health care financing Be able to describe the various options in health care financing that is used in Nigeria Familiarize themselves with the pattern in health care expenditure in Nigeria 3.0 MAIN CONTENT 3.1 National Health Policy on Health Care Financing The 1988 National health policy declares that Federal and State Government shall review their allocation of resources to the health sector and within available resources give priority to primary health care, community resources are to be mobilized in the spirit of self-help and self-reliance. In the 1988 policy it states that efforts shall be made to redistribute financial allocation among primitive, preventive and curative health care services to ensure that more emphasis is placed on primitive and preventive services other highlights on health care financing include; Exploration of health insurance scheme User charges for curative services but subsidized preventive services Public assistance shall be provided to the socially and economically disadvantaged segments of the population Governments of the Federation shall encourage

employers of labour to participate in financing health care services to employees Within the rights of individuals to participate in the economy of the nation, private individuals shall be encouraged to establish and finance private health care services in under-served areas. Within the concept of self-reliance, communities shall be encouraged to finance health care directly or find local community solutions to health problems through contribution of labour and materials Mechanisms shall be established to undertake continuing studies on benefit of various health programmers in relation to costs and inclusion of analysis of needs in terms of cost, material and personnel in all consideration of health technology and of the establishment and maintenance of health infrastructure.
NSS 412
HEALTHECONOMIC SELF ASSESSMENT EXERCISE 1 List the major health care financing issues addressed by the National Health Policy Recently the public sector reform of government has its own form in the health sector, which is referred to as the health sector reform. Health sector reform seeks to improve efficiency in service delivery, make health care accessible and provide quality health service. Government is now outsourcing some of the services in the health facilities like Laundry, Security service, Kitchen among others. Government is also promoting public private partnership in health care delivery. 3.2 Health Financing By Tiers of Government Local Government The provision of primary health care is largely the responsibility of the various Local Governments within their Local Government Areas. Each the Local governments are expected to provide the various components of PHC. This requires facilities, equipments and personnel. The Local Government provides funding for this levels of care particularly the public institutions providing this care. State Government The State governments provide secondary health care which is specialized care to patients referred from the Primary Health Care through in-patient and out-patient services of hospitals for general medical, surgical, pediatrics patients and community health services. Specialized supportive services such as Laboratory, Blood Bank, Rehabilitation and Physiotherapy services are supposed to be available at this level. This type of care is expected to be at the level of districts, Local governments and zonal levels of each State. In addition to the secondary health care service, the State Governments also provide supportive PHC services to the Local Governments. NSS 412 HEALTH ECONOMICS 72 Federal Government The Federal Government is involved in provision of specialized services through Teaching Hospital and other special hospitals which provide care for specific disease conditions or specific group of patients e.g. Orthopedic, Ophthalmic, Maternity and Pediatric Hospitals. This level of care requires big facilities, infrastructures and equipment as well as highly skilled personnel. This is financed by the Federal Government although presently some State
2 governments now get involved in provision of this level of care. In addition to this role, the Federal Government also provide supportive and supervisory role to Primary Health care at the State and Local Government Levels. SELF ASSESSMENT EXERCISE 2 Write briefly on what each tier of government finance in health care delivery and give specific examples 3.3 Options in Health Care Financing Government Financing of Health Care This option has in Health care financing has been in place since the colonial period. From independence government continued to fund health care in form of primitive, preventive and curative health care as described above. In the past there were some governments had free health care programmers where the government make health care free to its people and bear the cost of such care. The coverage of such health care was however grossly inadequate. In view of the very cost required to provide such free health care which some of the State government were unable to provide, the free health care programmers virtually became ‘no’ health care. Some particular health needs are still provided free by some State government e.g. free eye tests, maternal care, children care. User charges This option in

health care has been in place over a long period though initially at a low scale but now increasing and now the most dominant in health care financing in Nigeria. This is with its advantages ad disadvantages. Remember you learnt the various advantages and disadvantages of this option in health care financing in Unit 6 of this module. Affordability of cost of health care is a big problem to many NSS 412 HEALTH ECONOMICS 73 Nigerians and this is affecting utilization of services. Unfortunately patients go for alternatives that are usually sub-standard in terms of quality of care. Community Financing In Nigeria there are several community based organizations. Some of these organizations engage in self-help projects which include health related activities. Some communities erect buildings for health centre. Some provide labour to augment health care financing in their areas. Communities are sometimes involved in preventive health care services I the form of digging of public wells, construction of public latrines. Some communities are however faced with poor contributions to sustain projects they had earlier embarked upon. At the same time some community projects that were completed and handed over to government are poorly maintained. Health Insurance The National Health Insurance scheme which had been on the drawing board for decades in Nigeria has been launched and is in its early phase of implementation. Most of the people currently enrolled on the scheme are public civil servants. The scheme with time will cover increasing number of people in the country. Private health care financing is also available in some urban settings in Nigeria. Unit 9 discuss in more details health insurance scheme in Nigeria. Foreign Aid Nigeria receives foreign aid from several International Agencies, bilateral government agencies. Some of these funds are channeled through the National Planning Commission. A number of International Agencies also channel funds directly to various levels of government, Non-Governmental Organizations and Religious groups. SELF ASSESSMENT EXERCISE 3 i. Describe the various options of health care financing in the community where you work. NSS 412 HEALTH ECONOMICS 74 ii. List areas of differences in health care financing options in the community where you come from. 3.4 Health Care Expenditures Total public health expenditures consist of expenses incurred in the provision of all forms of health care by all levels of government. There is insufficient data on this. Available data point to the fact that public expenditures in the health sector has been very low either when compared with those of other key sectors of the economy, such as education, agriculture, etc or when expressed in percentage terms in relation to the gross domestic product. Total government expenditure in relation to GDP ranged from 4.3–5.5% from 1998 to 2004. In percentage terms Federal health sector in relation to total Federal government expenditures fluctuated between 0.98% and 2.51 % between 1980 and 1990. Recent data suggest a little increase in percentage budgetary allocation to the health sector but still far short of World health Organization recommendation of a minimum of 15% to the health sector. While the health sector in the 70s and early 80s consumes between 2.0%and 3.0% of the Federal recurrent budgetary allocation, its share in the State and Local Government levels range from 10- 11% and 31- 40 % respectively. Between 1998 and 2004 government expenditure on health as a proportion of total expenditure ranged between 3.1 – 7.1%. Total health expenditure reveals that at all levels of government; recurrent expenditures take the lion share. At the Federal level, the recurrent share of the health budget was between 64.8% and 70.0% between 1980 and 1990. Also on the average for State and Local governments 80.0% and 90.0% of the health budget is devoted to recurrent expenditure, personnel cost dominate the recurrent expenditure. User fee (out-of-pocket expenditure) is the predominant expenditure for health care in Nigeria. As a proportion of total expenditure on health, user fees ranged from 90.4 – 95.0% between 1998 and 2004. Federal allocation to Primary Health Care (PHC) has been negligible less than 0.5% of recurrent expenditures. Although the

proportion is still low, there is an indication that the policy emphasis on PHC in recent time has led to a gradual increase in the level of its funding. However, major part of the State and total Local government health budget is devoted to PHC. NSS 412 HEALTH ECONOMICS 75 Out of the total budgetary allocation to the health sector, a disproportionately high percentage is expended on recurrent expenditure to the detriment of capital expenditure. This is responsible for the rapid decline in standard of public health facilities, poor infrastructures and inadequate equipments for health services. SELF ASSESSMENT EXERCISE 4 Write on the major features of health care expenditures in Nigeria Table 1: National Expenditure on health NIGERIA : National Expenditure on Health (Naira) A. RATIOS AND LEVELS 1998 1999 2000 2001 2002 2003 2004 I. Expenditure ratios Total expenditure on health (THE) % GDP 5.5 5.4 4.3 5.3 5.0 5.0 5.1 General government expenditure on health (GGHE) % THE 26.1 29.1 33.5 31.4 25.6 25.5 27.4 Private expenditure on health (Pvt THE) % THE 73.9 70.9 66.5 68.6 74.4 74.5 72.6 GGHE % General government expenditure 7.1 5.4 4.2 3.2 3.1 3.2 3.5 Social security expenditure on health % GGHE 0 0 0 0 0 0 0 Net out-of-pocket spending on health (OOPs) % Pvt THE 95.0 94.8 92.7 91.4 90.4 91.2 91.3 Private prepaid plans expenditure on health % Pvt THE 2.4 3.4 5.1 6.5 6.7 6.7 6.6 Externally funded expenditure on health % THE 13.1 13.8 16.2 5.6 6.1 5.3 4.6 NSS 412 HEALTH ECONOMICS 76 II. Per capita levels THE per capita at exchange rate (US$) 16 17 18 19 19 22 26 GGHE per capita at exchange rate (US$) 4 5 6 6 5 6 7 THE per capita at international dollar rate 47 48 39 50 49 51 55 GGHE per capita at international dollar rate 12 14 13 16 12 13 15 Source – WHO web site 4.0 CONCLUSION Health care financing is addressed by the National Health Policy. Adherence to the National Policy on health financing does not appear satisfactory. Government funds both preventive and curative health care but the gap in funding over the years has brought in other options in health care financing. Available data suggest that user fees (out-ofpocket expenses) is the highest contributor to health care financing in Nigeria. Generally government funding of health care in Nigeria is far below WHO requirement. 5.0 SUMMARY In this unit you have been put through the Health care financing from the perspective of the National Health Policy. The various options of health care financing in Nigeria has been described. This unit also helps you to understand the trend and pattern in health care expenditures in Nigeria and this will help you understand the current state of health facilities and services. 6.0 TUTOR MARKED ASSIGNMENTS 1. Describe the various options in health care financing in Nigeria. 2. Write on the pattern and trend in health care expenditure in Nigeria. 7.0 REFERENCES/FURTHER READINGS Alausa O.K., Osibogun A. Health care financing in a depressed economy – options for Nigeria. Nigeria Journal of Health Planning and Management, 1996, 1(2):37 – 40. NSS 412 HEALTH ECONOMICS 77 FMOH. The National Health Policy and Strategy to Achieve Health for all Nigerians. Federal Ministry of Health, Nigeria. 1998: 49 -50
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http//www.who.int/nha/country/nga/en/ 3-2-07 NSS 412 HEALTH ECONOMICS 78 UNIT 2 NATIONAL HEALTH INSURANCE SCHEME IN NIGERIA CONTENTS 1.0 INTRODUCTION Health Insurance Scheme is now in place in Nigeria as one of options for health care financing. The history of health insurance scheme in Nigeria is over 3 decades but not until 1997 that the scheme was officially launched. The implementation of the scheme in Nigeria is planned to be in phases commencing with pubic civil servants. Private sector involvement is incorporated into the scheme with the use of Health Maintenance Organizations (HMOs) to collect contributions from participants and also pay providers of services. 2.0

OBJECTIVES In this unit readers will be made to: To know the historical background of Health Insurance in Nigeria Know the objectives of the scheme and the health care covered by the scheme Understand how the scheme works 3.0 MAIN CONTENT NSS 412 HEALTH ECONOMICS 79 3.1 Historical Perspective In Nigeria the first search for health insurance system started in1962 during the first republic. The federal government invited Dr. Halevi through the International Labour Organization (ILO) to look into starting an health insurance system in Lagos. Dr. Halevi supported the system but the Nigerian Medical Association opposed it. The civil war years, caused the matter to be shelved but was resuscitated by the National Council on Health in the early 80s, two decades after. The Minister of Health, Admiral Patrick Koshoni, on the advice of the National Council of Health commissioned a study led by Professor Diejomaoh of the Nigerian Institute for social and economic research (1984). This was later followed in 1965 by a feasibility study chaired by Mr. Yinka Lijadu of the National Insurance Corporation of Nigeria which found the scheme feasible, workable and desirable in Nigeria. Finally, in 1988, Professor Olikoye Ransome Kuti, commissioned the National Committee on Establishment of the NHIS, chaired by Emma-Eronini and recommended the capitation model, which is easy to run and almost tailor made for our health system and traditions. The United Nations Development Programme (UNDP) and International Labour Organization (ILO) consultants along with others conducted their own studies in Nigeria to provide costing, draft legislation and implementation guidelines for establishing the scheme in 1992. Then the federal executive council, which had given its approval in 1989, directed federal ministry of health in 1993 to start the scheme, which was launched in 1997, and finally signed to law in May 10, 1999 by the then Head of State General Abdulsalam Abubakar. SELF ASSESSMENT EXERCISE 1 Write a short essay on the history of health insurance scheme in Nigeria. 3.2 NHIS: The Nigerian Concept It is a social health security arrangement to provide financial security to the citizens against unforeseen ill health. A scheme established by law number 35 of 1999 to improve health care delivery by providing a sustainable alternative source of funding health care services. The scheme works on the principle that higher income earners will subsidize those with lower income; and those with lower health needs will subsidize those with higher needs. Resources are pooled among a large population so that sufficient fund will be made available to take care of individuals needing health care at any one time. It will be a solution to NSS 412 HEALTH ECONOMICS 80 the problem of inappropriate use of the levels of health care leading to unnecessary costs and underutilization. It guarantees access to health care as of right to participants. The establishment of the scheme was informed by the general poor state of the nation’s health care services especially in relation to accessibility, quality of services rendered, utilization and distribution, the excessive dependence and pressure on the government provided health services, and dwindling funding in the face of rising cost of heath care services. 3.3 Objectives of the scheme The objectives of NHIS include: 1. To ensure that every Nigerian has access to good health care services. 2. Protecting families from the financial hardship of huge medical bills. 3. To ensure equitable distribution of health care costs among different income groups. 4. Limiting the rise in the cost of health care services. 5. To improve and harness private sector participation in the provision of health care services. 6. To ensure equitable patronage of all levels of health care. 7. To maintain high standard of health care delivery services within the scheme. 8. To ensure availability of funds to the health sector for improved services. 9. To ensure efficiency in health care services. 10. To ensure adequate distribution of heath facilities within the federation. SELF ASSESSMENT EXERCISE 2 List the objectives of the National Health Insurance Scheme 3.4 Health Care Benefits of the Scheme The benefits derived from participating in the scheme are defined by law, are fairly

comprehensive and include the following: 1. Defined elements of curative care such as: NSS 412 HEALTH ECONOMICS 81 Out patient attendance Maternity care for up to four births for every insured person Consultation with defined range of specialist Hospital care in a public or private hospital in a standard ward, during a stated duration of stay, for physical or mental disorders. Eye examination and care, excluding tests for and the actual provision of spectacles Defined dental care: 1. Consultant, Oral examination, preventive care and pain relief 2. Preventive care including immunization, family planning, antenatal, post-natal care and health education. 3. Prescribed drugs and diagnostic tests 4. Prostheses and rehabilitation From the above it is evident that the contribution of a small affordable amount buys a lot in terms of health care. 3.5 How the Scheme Works For participation in the scheme, contributors will first register with an NHIS approved Health maintenance Organization (HMO) and thereafter register with a primary health care provider of his choice for an approved list of providers supplied HMOs. When a contributor is registered he will be issued an Identity card (ID) card with a personal identification number. In the event of sickness the contributor presents his ID card to his chosen primary health care provider (PCP) for treatment. A contributor has a right to change his PCP after a minimum period of six months if he is not satisfied with his services. Disputes between actors in the scheme shall be settled by arbitration boards to be set up at state level, whose membership includes representative of NMA; Pharmaceutical Society of Nigeria; The National Association of Nigerian Nurses and Midwives and the public. The HMO will make payment for services rendered to him to the health care provider. A contributor may be asked to make a small co-payment per prescription at the point of service. A contribution made by the insured person entitles himself or herself, spouse and four children under the age of 18 years to full health benefits. However students in school upon to the age 25years qualify as dependants. Extra contributions will be required for additional dependants. Contribution to be made by formal sector employees for health benefits under the scheme will be 15% of wages, the payment of which will be by both the employee and the employer. The employee pays 5%, while the employer makes up the remaining 10%. The NSS 412 HEALTH ECONOMICS 82 employee's part of the contribution is to be deducted from his pay with the employer adding his own and subsequently forwarding the total payment to the appropriate quarters. The implementation of the scheme is planned to be in phases to cover all Nigerians categorized as follows: 1. Employers in the formal sector (public and private) – their contribution will be paid by their employers and those in public sector by the federal state local governments Parastatals and agencies as appropriate. 2. Self-employed person (market women, traders, artisans, farmers and Businessmen etc) – they will be encouraged to pay their contributions either by themselves or through cooperatives formed by them. 3. Rural dwellers –for this group suitably priced programmers designed for them will be implemented in consultation with various organizations such as the community banks, cooperatives, local state and federal governments as well as donor agencies and other NGOs. 4. Vulnerable groups which include the unemployed, the aged, the disabled, the street children, the retarded and the retirees – their contribution will be paid on their behalf by the federal government, state government and local governments NGOs, local community and philanthropists. It is however important to emphasize that coverage will be phased starting with employees in the formal sector representing a definable group. SELF ASSESSMENT EXERCISE 3 Write briefly on how the National Health Insurance Scheme works 4.0 CONCLUSION The National health Insurance Scheme is set to provide access to quality health care to all Nigerians. Quality, accessible and sustainable health care that is adequately funded, will be guaranteeing a healthy populace, also provide an economically productive one, the benefits of which will be accruable to the individual, the organization and to the Government. The scheme is already being implemented in the country and

started with workers in the public sector. NSS 412 HEALTH ECONOMICS 83 5.0 SUMMARY In this unit you have read through the history of health insurance scheme in Nigeria and the objectives of the scheme were itemized. Also the various benefits of the scheme are listed. You have also been able to understand how the scheme works. The next unit will discuss the strategies and action points in the implementation of the scheme. 6.0 TUTOR MARKED ASSIGNMENTS Write an essay on the history of Health Insurance Scheme in Nigeria. 7.0 REFERENCES/FURTHER READINGS Akande T.M., Olugbenga-Bello A.I. National Health Insurance Scheme in Nigeria. Medilor Vol. 7 No.1:21 – 25. Aruna O.S. The national Health Insurance Scheme- Concept and Implementation Katibi I.A., Akande A.A., Akande T.M. Awareness and attitude of medical practitioners in Ilorin towards National Health Insurance Scheme. Nigeria medical Practitioner Vol. 43 No. 2: 33 – 35. NHIS National Health Insurance Scheme (NHIS) Guidelines. NHIS Abuja. Onafase A.N. The Perceived role of private insurance companies in the national Health insurance scheme. Ilorin doctor 1998 Oniyia J.C Essential information for medical lab. Scientists. Lab news 2001: 9 – 10. Report of technical committee on the coverage of the vulnerable group in the national health insurance scheme December 1999. Sambo M.M The national Health insurance scheme (Paper presentation) 2001 NSS 412 HEALTH ECONOMICS 84 UNIT 3 STRATEGIES FOR IMPLEMENTATION OF NHIS IN NIGERIA CONTENTS 1.0 INTRODUCTION In Unit 9 you read through the history of health insurance scheme in Nigeria, the objectives of the scheme as well as the benefits of the scheme. In this unit you will be exposed to the strategies in the implementation of the scheme in Nigeria. In the evolution of the National Health Insurance Scheme, the recognition of inefficient and inappropriate use of resources as prevalent and recurring problems in the health sector, informed the decision to make the scheme private-sector driven. This led to the introduction of HMOs as integral stakeholders in scheme. 2.0 OBJECTIVES In this unit readers will be made to: know the strategies for the implementation of National Health Insurance in Nigeria Know the action points in the implementation of NHIS Understand the classification of the various health care providers in the scheme NSS 412 HEALTH ECONOMICS 85 3.0 MAIN CONTENT 3.1 Strategies/Implementation Action Points in Nigeria 3.1.1 Use of HMOs As the financial managers of the scheme and their functions include: 1. Collection of contributions from eligible employers and employees 2. Collection of contributions form other contributors 3. Payment of health care providers for services rendered 4. Maintenance of quality assurance in the delivery of health care benefits under the scheme. Private or public individuals /establishments may form these organizations, which are limited liability companies solely formed for the purpose of provision of health services and registered by the scheme. SELF ASSESSMENT EXERCISE 1 i. What is Health maintenance Organization (HMO)? ii. Mention some of their functions. 3.1.2 Involvement of Insurance Companies The NHIS saw a need to entrust the provision of the malpractice insurance to only reputable and reliable companies. The role of Insurance in the Scheme also includes Health care delivery as Health Insurance Companies. As the private sector has now been allowed full participation in the operation of the National Health Insurance Scheme, the operative from this sector are to be: 1. Health Maintenance Organizations (HMOs) to be formed by Health Care Management professionals. 2. Health Insurance Companies (HICs) to be formed by insurance professionals for the purpose of NHIS. An insurance company with adequate

resources could form a health insurance subsidiary for this purpose. In the alternative; a number of companies may jointly register a Health Insurance subsidiary. However, the role of both HMOs and the HICs would be the same, as both of them NSS 412 HEALTH ECONOMICS 86 would ensure that Health Providers provide the required health care to the insured user under the scheme. To be able to perform this role the Health Insurance Companies must be registered by the Corporate Affairs Commission, satisfy the requirements of National Insurance Commission and must ultimately be registered by the National Health Insurance Council. As the scheme is expected to take off initially only in some pilot states, each HIC is expected to put in place necessary facilities for efficient operation in the zone in which the company will operate. For proper functioning, it is advisable that Health care management professionals form part of the health Insurance Companies. The HICs are expected to be associated with HMOs who will carefully select from the registered health care providers, those they would use for their key role of health care delivery to their insured. Proper record keeping and regular monitoring of their operations, using modern information technology will enhance the success of the scheme. SELF ASSESSMENT EXERCISE 2 In what ways can insurance companies be involved in NHIS? 3.1.3 Malpractice Insurance In order to ensure seriousness in the Health care providers and also that compensation is available for an aggrieved user of their service or negligence; the National Health Insurance Scheme requires every health care provider to have in force malpractice insurance. It is expected to be one of the conditions of their registration. As medical practice is noted for its nomenclature, malpractice insurance seems to be the medical nomenclature for professional indemnity insurance. Apart from the physician, all other professionals in the health care provider’s outfit such as nurses, midwives, pharmacists, physiotherapists, radiographers should possess valid professional indemnity insurance either as an individual or as a corporate body, depending on their mode of operation. ____

SELF ASSESSMENT EXERCISE 3 NSS 412 HEALTH ECONOMICS 87 How relevant is malpractice insurance in health care delivery in Nigeria? 3.1.4 Registration / Licensing Of Health Care Providers A health care provider is a licensed government or private health care practitioner or facility registered by the scheme for hate provision of health benefits to contributors and their dependants. They are classified under the scheme as either a primary health care provider or a fee-for service health care provider. The primary health care provider (“gate-keeper”) will serve as first contact with the care system and they include: private clinic/ hospital Primary Health care centre (private or Government) Nursing and maternity homes (overseen by a doctor) Outpatient department of General, Specialist and Teaching Hospitals. Payment for services rendered by these providers to contributors shall be by capitation. This is a predetermined sum of money paid by the HMOs on behalf of a contributor for services rendered by the provider. This payment is made monthly whether or not the services are used. The feefor-service health care provider include: specialist doctors, pharmacists, laboratory scientists, radiographers, physiotherapists and dentists. The provider shall only provide services to the contributor on referral from the primary health care provider, the essence of which is to ensure the appropriate use of the levels of health care for efficiency. Their payment will be made immediately on completion. 3.1.5 Payment system Health providers under the scheme will be paid either by capitation or fee-for service rendered. Capitation: is the payment to a primary health care provider by the HMOs on behalf of a contributor for services rendered. This is made monthly whether or not the services are used. Fee-for service-: this is made by HMOs to non-capital receiving health care providers who rend services on referral from other health care providers. When the a registered client in a health facility consumes some form of health care, the client is required to pay directly to the provider 10% of

2

the total cost of care consumed that are within the coverage of the scheme. NSS 412 HEALTH ECONOMICS 88 3.1.6 Responsibilities of the Provider The NHIS is a worthwhile scheme that will be of immense benefits to the entire stake-holders, including the health care providers. But any provider who hopes not only to survive but also grow in the new dispensation must be well equipped to cope with the changes that are imminent with new health care funding arrangements. A good understanding of the principles of the NHIS is imperative. For the scheme to succeed there are responsibilities imposed on the health care providers and they include: Provision of agreed services that are of good quality to the patient at all times. The provision and maintenance of standard facilities in their establishment Providers' facilities are required by law to set up quality assurance programmed. Such programmers must be well-defined, comprehensive, problem-focused, effective, well-coordinated, and flexible and cost efficient. Creating means effective communication with patients, their relations and friends and putting in place an efficient feedback mechanism to get the views of patients, monitor their reactions and level of satisfaction with the types/quality of service offered, and ensuring the needed adjustment are made. The provider should at all times abide by the provision of the legal agreement between himself and the HMO. There should be in place organized booking system to reduce waiting time for patients to a minimum. 3.7 Classification of Health Care Providers 1. Primary Health Care Providers First contact with the Scheme i.e. gatekeepers. These include: Primary Health Care Centers i) Comprehensive health care centers ii) Nursing and maternity homes (With prove of access to Medical Practitioner). iii) Out-patient departments of General Hospitals, Specialty Hospitals, Specialist Hospitals, Federal Medical Centers, Teaching Hospitals, Armed Forces, the Police and other uniformed services Hospitals/Clinics, University Medical Centers, and Federal Staff Clinics/Hospitals. NSS 412 HEALTH ECONOMICS 89 iv) Non-specialist private hospitals and clinics. 2. Secondary Health Care Providers provide health services on referral from Primary Providers These include: i) General/Divisional Hospitals (out-patient specialist care and in-patient care for medical, surgical, pediatrics, obstetrics and gynecology etc), ii) Specialist Hospitals/Reference Hospitals iii) Federal Medical Centers iv) Pharmacies v) Laboratories vi) Dental clinics vii) Physiotherapy clinics viii) Radiography centers, etc. 3. Tertiary Health Care Providers provide health services on referral from primary and secondary levels. These include: i) Teaching hospitals ; ii) Specialist hospitals, iii) Specialty/specialized hospitals (orthopedic, psychiatric, etc), iv) Federal medical centres, and v) Military reference hospitals. 4.0 CONCLUSION The National health Insurance Scheme is set to provide access to quality health care to all Nigerians. Beneficiaries of the scheme register with a Health Maintenance Organization that collects contribution from the employee and employer and also make payment to providers of health services. Clients are expected to make use of health facility through a primary care provider who refers the patient to other levels if necessary. 5.0 SUMMARY Private participation in the scheme through Health Maintenance Organizations has been described. The strategies and implementation action points of the scheme are also described in this unit. You have also been exposed to the classification of health facilities for the purpose of effective functioning and referral system within the scheme. 6.0 TUTOR MARKED ASSIGNMENTS NSS 412 HEALTH ECONOMICS 90 1. Write an essay on the Operations of the National Health Insurance Scheme 7.0 REFERENCES/FURTHER READINGS Akande T.M., Olugbenga-Bello A.I. National Health Insurance Scheme in Nigeria. Medilor Vol. 7 No.1:21 – 25. Aruna O.S. The national Health Insurance Scheme- Concept and Implementation Katibi I.A., Akande A.A., Akande T.M. Awareness and attitude of medical practitioners in Ilorin towards National Health Insurance Scheme. Nigeria medical Practitioner Vol. 43 No. 2: 33 – 35. NHIS National Health Insurance Scheme (NHIS)

Guidelines. NHIS Abuja. Onafase A.N. The Perceived role of private insurance companies in the national Health insurance scheme. Ilorin doctor 1998 Oniyia J.C Essential information for medical lab. Scientists. Lab news 2001: 9 – 10. Report of technical committee on the coverage of the vulnerable group in the national health insurance scheme December 1999. Sambo M.M The national Health insurance scheme (Paper presentation) 2001 NSS 412 HEALTH ECONOMICS 91 UNIT 4 ECONOMIC EVALUATIONS OF HEALTH PROGRAMS CONTENTS 1.0 Introduction 2.0 Objectives 3.0 Main Content 3.1 Cost-Benefit Analysis (CBA) 3.2 Cost effectiveness Analysis 3.3 Cost of Illness Evaluation 3.4 Cost-Minimization Analysis 4.0 Conclusion 5.0 Summary 6.0 Tutor Marked Assignments 7.0 References/Further Readings 1.0 INTRODUCTION Economic evaluation is now becoming increasing important and relevant in health care delivery. In view of scarce resources, decision makers need to know how best to use the little available funds judiciously. Through economic evaluation various strategies of health care delivery can be compared objectively making it relatively easy to choose the best and most efficient service. 2.0 OBJECTIVES In this unit the learner is to: Understand what economic evaluation is The various methods of economic evaluation 3.0 MAIN CONTENT 3.1 Costs-Benefit Analysis (CBA) Compares the cost incurred and the benefits obtained form the health care on the disease. When the benefits exceed costs, the resources have been effectively utilized. Cost benefit analysis compares the costs and benefits in using resources in a specific way as against alternative uses. Cost benefit analysis allows for the identification, measurement, and comparison of the benefits and costs of a programme or treatment alternative. The benefits realized from a programme or treatment alternative compared with the costs of providing the programme or NSS 412 HEALTH ECONOMICS 92 treatment alternative. Both the cost and the benefits are measured and converted into the monetary equivalent in the year in which they will occur. Future costs and benefits are discounted or reduced to their current value. The costs and benefits are expressed as a ratio (a benefit– to-cost ratio). If the Benefit / Cost ratio is greater than 1 the program or treatment is of value, i.e. the treatment benefit outweigh the cost of providing the programme. Where Benefit / Cost are equal to 1 then the benefits equal the cost. If Benefit / Cost are greater than 1 then the program or treatment is not economically beneficial. To measure in monetary terms the benefit of an health intervention particularly in developing countries is difficult and a major limitation to using this type of economic evaluation. 3.2 Cost-Effectiveness Analysis (CEA) It compares the cost or effectiveness of different options of using resources. Because of the difficulty in measuring benefits particularly humanitarian benefits, cost-effectiveness analysis is often used for economic appraisal in health care. CEA is a way of summarizing the health benefits and resources used by competing health care programs so that policy makers can choose among them. The outcome unlike the input is not measured in monetary unit. Cost-effectiveness-Analysis investigates the best and cheapest way of achieving a single objective by comparing effects and costs. The aim of Cost Effectiveness Analysis (CEA) is to determine one of the following; Which of a number of possible interventions achieves a given objective at least cost Given a fixed budget the intervention maximizes the effectiveness of the expenditure The best cost-effective intervention is the one with the lowest total costs and in a situation where interventions are equal in cost, the better one is the one with highest effectiveness. The most cost-effective alternative is not always the least costly alternative for obtaining a specific treatment objective. SELF ASSESSMENT EXERCISE 1 Differentiate Cost Benefit Analysis from Cost Effectiveness Analysis 3.3 Cost of Illness Evaluation This identifies and estimates the overall cost of a particular disease on a defined population. This method is often referred to as 'burden-of- NSS 412 HEALTH ECONOMICS 93 illness' and it involves measuring the direct and indirect costs attributable to a specific disease. This method of

evaluation does not really compare various strategies rather it helps establish the cost of a particular disease on a defined population. 3.4 Costs-Minimization Analysis Cost-minimization analysis (CMA) involves the determination of the least costly alternative when comparing two or more treatment alternatives. In CMA analysis, the alternatives must have an assumed equivalency in outcome. This method of evaluation is simple as it compares competing treatment modalities or programme as long as there is evidence that the outcomes of both modalities are equal. Other forms of Economic Evaluation Another form of economic appraisal is quality Adjusted Life Years (QALYS') which is a cost-utility analysis (CUA). It allows more than one type of outcome to be included unlike CEA. This however assumes that there are no other objectives to health care than health maximization. CONCLUSION Economic evaluation is becoming increasingly relevant in health care delivery. This will assist in making informed choice on most effective strategies or intervention that can be used in health care delivery. Each of the methods of economic evaluation has their limitations and the areas in which they can be applied. Costing the benefit of health intervention or programme is a big challenge in developing countries. 5.0 SUMMARY In this unit you have been able to read about economic evaluation. This unit also describes some types of economic evaluation which include; cost benefit analysis, cost effectiveness analysis, cost of illness evaluation and cost minimization evaluation. 6.0 TUTOR MARKED ASSIGNMENTS 1. Describe the various methods of economic evaluation in health care delivery. NSS 412 HEALTH ECONOMICS 94 7.0 REFERENCES/FURTHER READINGS Abel-Smith B. (1984). Improving cost effectiveness in health care. World Health Forum: Vol. 5: 88-90 Djukanovic, V. and Mach E. (1995). Alternative approaches to meeting basic health needs in developing countries. A Joint UNICEF/WHO study. pp 19 – 21. GTZ (Deutsche Gesellschaft fur Technische Zusammenarbeit) Workshop Report. Financing District Health Services. International Workshop held 11th – 15th April 1994 in Nairobi Kenya. Published by GTZ Eschborn, Germany. WHO (1981). Guidelines for health care practice in relation to costeffectiveness. Report on a WHO Workshop, Euro Report on a WHO Workshop, Euro reports and studies 53. World health Organization Publication, Geneva pp 32 – 34. World Bank (1987). Financing health Services in Developing Countries. An Agenda for reform; A World Bank Policy Study, Washington USA, pp 10 – 24. World Bank (1994). Development in Practice, Better Health in Africa, Experience and lessons WHO (1987learned. A World Bank Publication pp 125 – 142.

HEALTH ECONOMIC INFORMATION RESOURCES

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2
Home > Health Services Research & Public Health > NICHSR Printer-friendly Version About these Modules Home Introduction and Purpose Index The Modules Modules Available for Study: Module 1, Part 1: Scope of Health Economics Module 1, Part 2: Key Information Sources Module 2: Sources and Characteristics of Information Module 3: Identification and Retrieval of Published Health Economic Evaluations Module 4 : Principles of Critical Appraisal of Health Economic Evaluations Health Economics Information Resources: A SelfStudy Course Introduction and Purpose This online course: ● Describes the scope of health economics and its key information resources ● Highlights the sources and characteristics of health care financing information in the U.S. ● Outlines issues relating to the quality of health economic evaluation studies ● Guides users in the identification, retrieval, and assessment of high quality health economic evaluation studies and related publications The purpose of this course is to

provide an overview and discussion of important sources of health economics information so that course participants can: ● Develop more systematic and effective approaches to its identification and retrieval ● Gain greater understanding about its quality and role in health policy formulation and decision-making Course Structure The course is presented in four modules, listed below. Learners should begin with Module 1 and progress linearly through the modules in order to maximize the http://www.nlm.nih.gov/nichsr/edu/healthecon/00_he_intro.html (1 of 4)5/31/2007 4:51:48 AM Health Economics Information Resources: A Self-Study Course: Module 1 Related Content: Glossary of Terms Key General Economics Concepts Bibliography Web Sites Quizzes/Review Evaluation Contact Us learning of this concept. Module 1 - The Scope of Health Economics and Key Information Sources Module 1 is divided into two parts: ● Part 1 - Outlines the scope of health economics and and includes the Williams' model of the Structure of Health Economics ● Part 2 - Outlines and highlights the type of information which may be required for health economics and where to find it Module 2 - Sources and Characteristics of Information Relating to Health Care Financing in the US Material for this module was prepared by Jean Newland, Librarian, Wharton School, University of Pennsylvania. It contains information on sources of information relating to health care financing in the United States. Module 3 - Identification and Retrieval of Health Economic Evaluations Module 3 presents an effective approach to systematic searching of published health economic evaluation studies by: ● Explaining the definition and purpose of economic evaluation studies ● Highlighting the characteristics of the health economic evaluation literature ● Examining how economic evaluation studies are indexed in the two major bibliographic databases, MEDLINE and EMBASE Module 4 - Principles of Critical Appraisal of Health Economic Evaluations Module 4 provides an introductory guide to quality appraisal of published health economic evaluation studies by: ● Explaining why appraisal is required ● Explaining each of the key areas to consider in the critical appraisal of health economic evaluation studies ● Providing an appraisal of a selected paper ❍ Appraised Paper ❍ Case Study - An economic evaluation of thrombolysis in the community http://www.nlm.nih.gov/nichsr/edu/healthecon/00_he_intro.html (2 of 4)5/31/2007 4:51:48 AM Health Economics Information Resources: A Self-Study Course: Module 1 Additional Content A glossary of health economics and related terms is provided for your use and links have been made to appropriate terms. A list of Web sites and a Bibliography for improving access to health economics information is also linked for viewing. A Glossary - A valuable glossary of terms is included with hypertext links from the text to the terms. List of Web sites - Useful Web sites that you can go to for additional information. Bibliography - Citations used in the compilation of this learning. Key General Economics Concepts - A few key economics concepts not covered in these modules but relevant to an understanding of health economics are included in a separate, optional section. No concepts from the Key Health Economics Concepts will be used in the quizzes. Additional Information Using the Learning This online course has been designed to work with Microsoft Internet Explorer®

version 4+ and Netscape™ version 4+. The course includes two different types of links that may be used to view glossary terms, or visit another Web page. Words and phrases that appear in bold blue are glossary items. Put your mouse over the term to view a definition. You can also click the link to visit the definition in the full glossary. You may view the entire Glossary by selecting the Glossary link in the course sidebar. Words and phrases that appear in blue and are underlined, are links to web sites such as other pages of the course or to other sites. Visited links are red. To return to the beginning of this course, click on the Home Page link that appears in the Menu bar. Learning as You Go: Testing Yourself Many pages have a link at the bottom of the page called: Test Yourself. A question based on the content that appeared on that http://www.nlm.nih.gov/nichsr/edu/healthecon/00_he_intro.html (3 of 4)5/31/2007 4:51:48 AM Health Economics Information Resources: A Self-Study Course: Module 1 page will appear. After answering the question. click the Return to Lesson link and Next at the bottom of the screen to continue on in the module. Quizzes, Evaluations and the Certificate of Success At the end of each module you may elect to try the quiz associated with that module's content. You must take the quiz and get 7 correct out of 10 questions correct in order to get the Certificate of Success for that module. (You may retake each of the quizzes as many times as you like). The Certificate is intended to be printed on a color printer, but you may also use a black and white printer as easily. When you have completed each module we invite you to give us feedback via the online evaluation form. We will use this information to improve this and other learning opportunities. Previous Next Last reviewed: 13 June 2006 Last updated: 13 June 2006 First published: 08 December 2003 Metadata| Permanence level: Permanent: Dynamic Content Copyright, Privacy, Accessibility U.S. National Library of Medicine, 8600 Rockville Pike, Bethesda, MD 20894 National Institutes of Health, Health & Human Services http://www.nlm.nih.gov/nichsr/edu/healthecon/00_he_intro.html (4 of 4)5/31/2007 4:51:48 AM Health Economics Information Resources: A Self-Study Course Search NLM Web Site NLM Home | Contact NLM | Site Map | FAQs National Information Center on Health Services Research and Health Care Technology (NICHSR) NICHSR Home | About Us | Contact Us Home > Health Services Research & Public Health > NICHSR Printer-friendly Version About these Modules Home Introduction and Purpose Index The Modules Modules Available for Study: Module 1, Part 1: Scope of Health Economics Module 1, Part 2: Key Information Sources Module 2: Sources and Characteristics of Information Module 3: Identification and Retrieval of Published Health Economic Evaluations Module 4: Principles of Critical Appraisal of Health Economic Evaluations Related Content: Health Economics Information Resources: A SelfStudy Course Glossary of Frequently Encountered Terms in Health Economics Note: Additional key general economics concepts can be found elsewhere in this learning opportunity. Access to Health Care 1) The degree to which individuals are inhibited or facilitated in their ability to gain entry to and to receive care and services from the health care system. Factors influencing this ability include geographic, architectural, transportational, and financial considerations, among others. (MeSH uses the term 'Health Services Accessibility'. 2) Entry [to the health care system] is dependent on the

2

wants, resources, and needs that individuals bring to the care-seeking process. Ability to obtain wanted or needed services may be influenced by many factors, including travel distance, waiting time, available financial resources, and availability of a regular source of care. (Turnock, 2001) Allocative Efficiency Assesses competing programs and judges the extent to which they meet objectives. An allocation of resources such that no change in spending priorities could improve the welfare of one person without reducing the welfare of http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (1 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course Glossary of Terms Key General Economics Concepts Bibliography Web Sites Quizzes/Review Evaluation Contact Us another. Attitude to Health Public attitudes toward health, disease, and the medical care system. (MeSH) Average Cost - see Cost Benefit The sum (usually expressed in money terms to make it commensurate with cost) of the effects on well-being (positive or negative) which a particular program bestows upon society. NB. as with costs, all benefits, and disbenefits, which result from a particular program are considered relevant, regardless of who gains them. Some of these benefits, such as relief of pain or suffering, are referred to as 'intangible'. These are difficult to quantify but attempts have been made to value them using for example, QALYs or the willingness-to-pay approach. Benefits The dollar amount available for the cost of covered medical services. Beneficiary Any person, either a subscriber or a dependent, eligible for service under a health plan. Blue Cross/Blue Shield A combined medical plan offered through a worker’s place of employment that combines both hospital and physician coverage. Capitation A fixed amount of payment per patient, per year, regardless of the volume or cost of services each patient requires. Clinical Effectiveness ...The application of interventions which have been shown to be efficacious to appropriate patients in a timely fashion http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (2 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course to improve patients' outcomes and value for the use of resources (Batstone, 1996). Controlled Vocabulary (Librarianship) Specific words and phrases (descriptors) used when creating subject headings for a book, article, etc. for a specific index or catalog. (Riverside) Co-payments (Co-pay, user charge) A fixed dollar payment that is made by the patient to the provider at the time of service. (Glossary) Consumer Behavior The observable behavior that a health care consumer does when deciding to acquire health care. Consumer Expenditure Survey Collects current consumer expenditure data, which provide a continuous flow of data on the buying habits of the American consumers. Consumer Price Index (CPI) Prepared by the U.S. Bureau of Labor Statistics, it is a monthly measure of the average change in the prices paid by urban consumers for a fixed market basket of goods and services. The medical care component of CPI shows trends in medical care prices based on specific indicators of hospital, medical, dental, and drug prices. Controlled Vocabulary (Librarianship) A means of searching a resource using words or terms selected by the creator of a resource or by an organization or individual other than the user of the resource. In contrast to a keyword, which can be

any word or term selected by the user of the resource. Searching a resource using controlled vocabulary is usually more precise and focused than searching by keyword. (University of Wisconsin) Cost The economic definition of cost (also known as opportunity cost) is the value of opportunity forgone, strictly the best http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (3 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course opportunity forgone, as a result of engaging resources in an activity. Note that there can be a cost without the exchange of money. Also the economists' notion of cost extends beyond the cost falling on the health service alone, e.g., includes costs falling on other services and on patients themselves. In considering the production process, costs may be differentiated as follows: ● Average costs - equivalent to the average cost per unit; i.e., the total costs divided by the total number of units of production. ● Fixed costs - those costs which, within a short time span, do not vary with the quantity of production; e.g., heating and lighting. ● Incremental cost - the extra costs associated with an expansion in activity of a given service. ● Marginal cost - the cost of producing one extra unit of a service. ● Total costs - all costs incurred in the production of a set quantity of service. ● Variable costs - those costs which vary with the level of production and are proportional to quantities produced. In considering health problems, costs may be differentiated as follows: ● Avoided costs - costs caused by a health problem or illness which are avoided by a health care intervention. ● Direct costs - those costs borne by the healthcare system, community and patients' families in addressing the illness. ● Indirect costs - mainly productivity losses to society caused by the health problem or disease. Cost Allocation The assignment, to each of several particular cost-centers, of an equitable proportion of the costs of activities that serve all of them. Cost-center usually refers to institutional departments or services. (MeSH) Cost Analysis Analysis of the comparative costs of alternative interventions or programs. Does not include consequences. (Drummond) Cost-benefit Analysis (CBA) An economic evaluation in which all costs and http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (4 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course consequences of a program are expressed in the same units, usually money. CBA is used to determine allocative efficiency; i.e., comparison of costs and benefits across programs serving different patient groups. NB. Even if some items of resource or benefit cannot be measured in the common unit of account; i.e., money, they should not be excluded from the analysis. Cost Comparison Cost comparison compares only the costs of two or more interventions or programs. (Zarnke) Cost Control The containment, regulation, or restraint of costs. Costs are said to be contained when the value of resources committed to an activity is not considered excessive. This determination is frequently subjective and dependent upon the specific geographic area of the activity being measured. (Dictionary) Cost Description Examines the costs of a single intervention or program. Does not include the consequences of the intervention and no comparison is made with an alternative intervention. (Zarnke) Cost-effectiveness The point at which the minimum amount of input (and therefore cost) is used to achieve a given output. Cost-

effectiveness Analysis (CEA) An economic evaluation in which the costs and consequences of alternative interventions are expressed cost per unit of health outcome. CEA is used to determine technical efficiency; i.e., comparison of costs and consequences of competing interventions for a given patient group within a given budget. See also Technical Efficiency Cost-minimization Analysis (CMA) An economic evaluation in which consequences of competing interventions are the same and in http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (5 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course which only inputs, that is, costs are taken into consideration. The aim is to decide the least costly way of achieving the same outcome. Cost of Illness The personal cost of acute or chronic disease. The cost to the patient may be an economic, social, or psychological cost or personal loss to self, family, or immediate community. The cost of illness may be reflected in absenteeism, productivity, response to treatment, peace of mind, QUALITY OF LIFE, etc. It differs from HEALTH CARE COSTS, meaning the societal cost of providing services related to the delivery of health care, rather than personal impact on individuals. (MeSH) Cost of Illness Study Aims to identify and measure the total costs attributable to a particular disease. These are not a type of economic evaluation as they are not used to assess the costs and benefits of alternative interventions or programs. They may provide useful information which can be used in the context of an economic evaluation of interventions related to the disease category, although care must be taken as not all costs included in a cost of illness study represent resource costs (Donaldson). Cost of illness studies may also be utilized in the estimation of the economic burden of disease. Cost Outcome Description Describes the costs and consequences of a single intervention or program. No comparison is made with an alternative intervention. (Zarnke) Cost Sharing Provisions of an insurance policy that require the insured to pay some portion of covered expenses. Several forms of sharing are in use, e.g., deductibles, coinsurance, and copayments. Cost sharing does not refer to or include amounts paid in premiums for the coverage. (Dictionary) Cost-utility Analysis (CUA) A form of economic study design in which interventions which produce different consequences, in terms of both quantity and quality of life, are expressed as 'utilities'. These are measures which comprise both length of life and http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (6 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course subjective levels of well being. The best known utility measure is the 'quality adjusted life year' or QALY. In this case, competing interventions are compared in terms of cost per utility (cost per QALY). See also QualityAdjusted-Life-Year. Costs and Cost Analysis Absolute, comparative, or differential costs pertaining to services, institutions, resources, etc., or the analysis and study of these costs. (MeSH) Decision-Making The process of making a selective intellectual judgment when presented with several complex alternatives consisting of several variables, and usually defining a course of action or an idea. (MeSH) Deductible (excess) A fixed dollar amount that the patient must pay before reimbursement begins; in most indemnity plans there is no separate deductible for drugs. (Glossary) Direct Service Costs Costs which are

directly identifiable with a particular service. (MeSH) Discounting A technique which allows the calculation of present values of inputs and benefits which accrue in the future. Discounting is based on a time preference which assumes that individuals prefer to forego a part of the benefits if they accrue it now, rather than fully in the uncertain future. By the same reasoning, individuals prefer to delay costs rather than incur them in the present. The strength of this preference is expressed by the discount rate which is inserted in economic evaluations. Drug Approval Used for investigational new drug application. (Emtree) Drug Costs The amount that a health care institution or organization http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (7 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course pays for its drugs. It is one component of the final price that is charged to the consumer (FEES, PHARMACEUTICAL or PRESCRIPTION FEES). (MeSH) Note: EMBASE uses Drug Cost (singular) Drug Formulary A list of drugs, usually by their generic names, and indications for their use. A formulary is intended to include a sufficient range of medicines to enable physicians, dentists, and, as appropriate, other practitioners to prescribe all medically appropriate treatment for all reasonably common illnesses. (AcademyHealth) Drug Utilization Drug prescription and use patterns. Economic Appraisal - see Economic evaluation Economic Burden of Disease, see Cost of Illness Economic Competition The effort of two or more parties to secure the business of a third party by offering, usually under fair or equitable rules of business practice, the most favorable terms. Economic Evaluation The systematic appraisal of costs and benefits of projects, normally undertaken to determine the relative economic efficiency of programs. See Cost-benefit analysis, Costeffectiveness analysis, Cost-minimization analysis, Cost-utility analysis. Economic Value of Life - see Value of Life Economic Value Theory The intrinsic worth of a commodity. If defined in terms of money, value determines price. It is traditional to separate the concepts of use value and value in exchange. Value in use is not an intrinsic quality of a commodity, but its capacity to satisfy human wants. Value in exchange is the worth of commodity in terms of its capacity to be exchanged for another commodity. In classical economics the existence of use value was a prerequisite for http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (8 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course commodities to have value in exchange. A commodity must possess UTILITY or usefulness in order for it to be produced or exchanged. (adapted from the Macmillan Dictionary of Modern Economics. 4th edition. Basingstoke. Macmillan. 1992) Economics (1) The science of utilization, distribution, and consumption of services and materials. (MeSH) (2) The study of how individuals and societies choose to allocate scarce productive resources among competing alternative uses and to distribute the products from these uses among members of the society. (World Bank, 2001) Effectiveness The contribution which a program makes to individuals' utility or welfare, normally through better health, but not necessarily solely through better health. Efficiency Making the best use of available resources; i.e. getting good value for resources. See also Allocative efficiency and Technical efficiency. Employer Health Costs That portion of total HEALTH CARE COSTS borne by an individual's or group's employing

organization. (MeSH) Epidemiology The study of the distribution of determinants and antecedents of health and disease in human populations; the ultimate goal is to identify the underlying causes of a disease, then apply findings to disease prevention and health promotion. (Turnock, 2001) Equity The degree to which some distribution or other is judged to be 'fair'. 'Fairness' involves a value judgment so; e.g., 'greater equality' need not imply 'greater equity'. http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (9 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course Externalities These are negative or positive utilities accruing to an individual from another person's consumption. For example, if the majority of a community is vaccinated against an infectious disease, the resulting herd immunity benefits those who have not been vaccinated. Fees and Charges Fee: A charge for a service rendered. (World Bank 2001) Charge: The amount asked for a service by a health care provider. Its contracted with the cost, which is amount the provider incurs in furnishing the service. It is difficult to determined precise costs for many services, and in such cases charges are substituted for costs in many reimbursement or payment formulas (often with the stipulation that the hospital's bookkeeping follow certain rules). (World Bank 2001) Finance 1) As a broad managerial field, finance is the art or science of obtaining and managing funds. 2) The manipulation of money and credit; the fields of banking, taxes, and insurance, and the money, foreign exchange, and investment markets. Finance directly involves other fields such as accounting, marketing, and production. It is an integral part of management in all three sectors of the economy (i.e., the private, non-profit, and public sectors). (Rhea) Financial Management The obtaining and management of funds for institutional needs and responsibility for fiscal affairs. Financing In health care finance, these are the methods of gaining, and the sources of, revenue in health services. Modes of financing include third-party payers, public grants, contracts with managed care, government contracts, direct public/government payment for service, philanthropic grants and payments for service, loans, bonds and self-pay. Financing, Organized http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (10 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course All organized methods of funding. (MeSH) Full Economic Evaluation Full economic evaluations are studies in which a comparison of two or more treatments or care alternatives is undertaken and in which both the costs and outcomes of the alternatives are examined. See also, Cost-benefit analysis (CBA), Cost-effectiveness analysis (CEA), andCost-utility analysis (CUA). GREAT Grampian Region Early Anistreplase Trial (GREAT). This is a single study randomized controlled trial. The study was multi-centered covering 29 rural general practices and one hospital. The follow-up period was four years. No loss to follow-up was reported. Gross Domestic Product (GDP) GDP is the market value of the goods and services produced by labor and property located in the United States. A barometer of the U.S. economy, it illustrates the pace at which the economy is growing or shrinking. Gross National Product (GNP) The market value of all final goods and services produced in a given time period (usually one

year) by the nationals of a country residing either in the country or abroad. (Glossary) Health Care Costs The actual costs of providing services related to the delivery of health care, including the costs of procedures, therapies, and medications. It is differentiated from HEALTH EXPENDITURES, which refers to the amount of money paid for the services, and from fees, which refers to the amount charged, regardless of cost. (MeSH) Note: Embase uses Health Care Cost (singular) Health Care Financing - see Financing Health Care Markets - See Health Care Sector Health (Care) Policy http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (11 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course Decisions, usually developed by government policymakers, for determining present and future objectives pertaining to the health care system. (MeSH) Health Care Reform Innovation and improvement of the health care system by reappraisal, amendment of services, and removal of faults and abuses in providing and distributing health services to patients. It includes a re-alignment of health services and health insurance to maximum demographic elements (the unemployed, indigent, uninsured, elderly, inner cities, rural areas) with reference to coverage, hospitalization, pricing and cost containment, insurers' and employers' costs, pre-existing medical conditions, prescribed drugs, equipment, and services. (MeSH) Health Care Sector Economic sector concerned with the provision, distribution, and consumption of health care services and related products. (MeSH) Health Care Rationing Planning for the equitable allocation, apportionment, or distribution of available health resources. Health Care Utilization - see Utilization Health Economics The study of how scarce resources are allocated among alternative uses for the care of sickness and the promotion, maintenance and improvement of health, including the study of how healthcare and health-related services, their costs and benefits, and health itself are distributed among individuals and groups in society. (World Bank 2001) Health Expenditures The amounts spent by individuals, groups, nations, or private or public organizations for total health care and/or its various components. These amounts may or may not be equivalent to the actual costs (HEALTH CARE COSTS) and may or may not be shared among the patient, insurers, and/or employers. (MeSH) http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (12 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course Health Inequalities The gap in health status, and in access to health services, between different social classes and ethnic groups and between populations in different geographical areas (Source NHS Public Health Electronic Library) Health Insurance Given that illness is unpredictable and that everyone's future health status is uncertain, demand for health care is also uncertain. The institutional response to this uncertainty is the development of insurance mechanisms whereby covered individuals make regular payments to some risk-pooling agency in return for guarantees of some form of reimbursement in the event of illness. This agency might be a public body or a private firm, the payments might be premiums or taxes, and the benefits might be indemnities (fixed cash payments) varying across illness events, reimbursement of all or part of actual health care expenditure, or direct provision (public or private) of services as needed." (Evans) Health Maintenance Organization (HMO) An HMO is a prepaid health plan delivering comprehensive care to members

through designated providers, having a fixed monthly payment for health care services, and requiring members to be in a plan for a specified period of time. (Health) Outcome In health economics, the term ‘outcome’ is used to describe the result of a health care intervention weighted by a value assigned to that result. (adapted from: Purchasing and providing cost-effective health care. Drummond MF & Maynard A (eds). Edinburgh. Churchill Livingstone. 1993. and Kielhorn A. and Graf von der Schulenburg J.M. The health economics handbook. 2nd ed. Chester. Adis International. 2000) Health Planning Planning for needed health and/or welfare services and facilities. (MeSH) Health Service Planning - see Health Planning Health Services Research http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (13 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course The integration of epidemiologic, sociological, economic, and other analytic sciences in the study of health services. Health services research is usually concerned with relationships between need, demand, supply, use, and outcome of health services. The aim of the research is evaluation, particularly in terms of structure, process, output, and outcome. (From Last, Dictionary of Epidemiology, 2d ed) (MeSH) Health Status 1. The degree to which a person is able to function physically, emotionally and socially, with or without help from the health care system. (Source: NHS Public Health Electronic Library) 2. The level of health of the individual, group, or population as subjectively assessed by the individual or by more objective measures. (MeSH) Health Technology Assessment Evaluation of biomedical technology in relation to cost, efficacy, utilization, etc., and its future impact on social, ethical, and legal systems. (MeSH, use: Technology Assessment, Biomedical when searching) Hospital Costs The expenses incurred by a hospital in providing care. The hospital costs attributed to a particular patient care episode include the direct costs plus an appropriate proportion of the overhead for administration, personnel, building maintenance, equipment, etc. Hospital costs are one of the factors which determine HOSPITAL CHARGES (the price the hospital sets for its services). (MeSH) Note: Embase uses Hospital Cost HYE (Healthy Years Equivalents) These have been suggested as an alternative to QALYs. The advantage of HYEs is that they fully represent individual preferences without imposing restrictive assumptions associated with QALYs. HYEs are measured using a two-stage gamble technique where the health state is described to the respondent, along with the duration of the state, and the respondent is asked how many years of life in full health would be equivalent to this http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (14 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course scenario. (HERU Glossary) Indemnity Monies paid by an insurer to a provider, in a predetermined amount in the event of a covered loss by a beneficiary; differs from reimbursement, which provides coverage based on actual expenses incurred. There are fewer restrictions on what a doctor may charge and what an insurer may pay for a treatment under indemnity payment, and generally there are also fewer restrictions on a patient’s ability to use specialty services. Industrial Organization Industrial organization is concerned with the working of the market economy and

generally organizes its approach in terms of market structure, conduct and performance of firms as well as the role of public policy with respect to market structure. (Macmillan) Insurance A method of providing for money to pay for specific types of losses, which may occur. Insurance is a contract (the insurance policy) between one party (the insured) and another (the insurer). The policy states what types of losses (see risk) are covered, what amounts will be paid for each loss and for all losses, and under what conditions. Two types of insurance commonly spoken of in health care are: (1) insurance covering the patient for health services (health insurance, also called a "third party payer"); and (2) insurance covering the health care provider for risk associated with the delivery of health care (liability to a patient for malpractice, for example) (World Bank, 2001) See also Health Insurance Insurance Premiums The payment individuals make to obtain health insurance. Investments The investing of funds for income or profit. (MeSH) Labor Economics The aspects of economics concerned with the supply and demand for labor. This includes factors affecting the participation rate, wage bargaining and organized labor, http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (15 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course training, hours and conditions of work, practices concerning hiring, redundancy, labor turnover, migration and the age of retirement. (Black) Managed Care Managed care is a health care plan that integrates the financing and delivery of health care services by using arrangements with selected health care providers to provide services for covered individuals. Plans are generally financed using capitation fees. There are significant financial incentives for members of the plan to use the health care providers associated with the plan. The plan includes formal programs for quality assurance and utilization review. HMO's, PPO's and POS plans are examples of managed care. Marginal Analysis (MA) The evaluation of the change in costs and benefits produced by a change in production or consumption of one unit; i.e., examines the effect of small changes in the existing pattern of health care expenditure in a given setting. Marginal Benefit The value of benefit derived when output is increased by one unit. Marginal Cost - see Cost Medicaid A joint federal/state program providing some payments for some health services for some individuals whose income and resources are insufficient to pay for their own care. Medical Ethics (MeSH uses Ethics, Medical) The principles of proper professional conduct concerning the rights and duties of the physician, relations with patients and fellow practitioners, as well as actions of the physician in patient care and interpersonal relations with patient families. (From Stedman, 25th ed) (MeSH) Medical Practice Variations - see Physician's Practice Patterns Medicare http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (16 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course A federal entitlement program of medical and health care coverage for the elderly and disabled and persons with end-stage renal disease. Medicine The art and science of preventing, diagnosing, and treating disease, as well as the maintenance of health. (MeSH) MeSH Tree (Librarianship) The National Library of Medicine's (NLM's) controlled vocabulary thesaurus. MeSH is the acronym for Medical Subject Headings. (NLM) Methods of Benefit Assessment Methods used by insurance

companies to assess the health benefits individuals receive based on the insurance they purchased. National Health Expenditures This measure estimates the amount spent for all health services and supplies and health-related research and construction activities consumed in the United States during the calendar year. Detailed estimates are available by source of expenditures (for example, our-of-pocket payments, private health insurance, and government programs), and by type of expenditures (for example, hospital care, physician services, and drugs), and are in current dollars for the year of report. Data are compiled from a variety of sources. Opportunity Cost The notion of cost used in economics. See also, Cost Option Appraisal (OA) The systematic examination of the relative advantages and disadvantages of alternative options in meeting specific health objectives before resources are committed to one or more programs. The foundations of option appraisal are in cost-benefit analysis and it usually used in appraisal of capital developments in the NHS. Organization of Economic Cooperation and Development (OECD) http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (17 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course An international organization of developed countries, which produces international statistics on healthcare systems in member countries and provides a forum for research and discussion about economic issues. (Glossary) Out-of-pocket Expenditures The portion of medical expenses a patient is responsible for paying. (Nevadans) Outcome Description Examines only the consequences of a single intervention or program. (Drummond) Partial Evaluation Partial evaluations constitute a number of economic study types which consider costs and/or consequences, but which either do not involve a comparison between alternative interventions or do not relate costs to benefits. (see module 3) Pharmacoeconomics Economic aspects of the fields of pharmacy and pharmacology as they apply to the development and study of medical economics in rational drug therapy and the impact of pharmaceuticals on the cost of medical care. Pharmaceutical economics also includes the economic considerations of the pharmaceutical care delivery system and in drug prescribing, particularly of cost-benefit values. (From J Res Pharm Econ 1989;1(1); PharmacoEcon 1992;1 (1) (MeSH) Physician's Practice Patterns Patterns of practice related to diagnosis and treatment as especially influenced by cost of the service requested and provided. (MeSH) Point of Service Plan (POS) A plan that contains elements of both HMO’s and PPO’s. They resemble HMOs for in-network services in that they both require co-payments and a primary care physician. Services received outside of the network are usually reimbursed on a fee-for-service basis. http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (18 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course Preferred Provider Organization (PPO) This is a health plan generally consisting of hospital and physician providers. The PPO provides health care services to plan members usually at discounted rates in return for expedited claims payment. Plan members can use PPO or non-PPO health care providers; however, financial incentives are built into the benefit structure to encourage utilization of PPO providers. Priority Setting and Rationing (MeSH term is Health Care Rationing) Planning for the

equitable allocation, apportionment, or distribution of available health resources. (MeSH) Psychology The science dealing with the study of mental processes and behavior in man and animals. (MeSH) Public Health Activities that society undertakes to assure the conditions in which people can be healthy. These include organized community efforts to prevent, identify and counter threats to the health of the public. (Turnock, 2001) Public Policy (and Finance) A course or method of action selected, usually by a government, from among alternatives to guide and determine present and future decisions. (MeSH) Purchasing Power Parities (PPPs) PPPs are the rates of currency conversion that eliminate the differences in price levels between countries. The PPP rate is formed by pricing the same, fixed basket of goods and services across different countries in the national currency of each country. For example, if an identical basket of goods and services cost 500 French Francs (FF) in France and US$100 in the US, then the PPP conversion rate would be calculated at five FF to one US$. Quality-Adjusted-Life-Year (QALY) (1) Units of measure of utility which combine life years gained as a result of health interventions/health care programs with a judgment about the quality of these life http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (19 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course years. (2) A common measure of health improvement used in cost-utility analysis, it measures life expectancy adjusted for quality of life. (World Bank, 2001) Quality of Life A generic concept reflecting concern with the modification and enhancement of life attributes, e.g., physical, political, moral and social environment; the overall condition of a human life. (MeSH) Reimbursement Payment for services. Payment of providers by a thirdparty insurer or government health program for health care services. Reimbursement can be either PROSPECTIVE REIMBURSEMENT or RETROSPECTIVE REIMBURSEMENT. MEDICARE has evolved a complex reimbursement system based of DRGs. Reimbursement is a major influence on the structure of the American health care system. Changes in the reimbursement mechanisms impact the cost and delivery of service, as well as trends in medical education and specialization. Remuneration Methods & Incentives Remuneration methods are payment/reimbursement methods which may include DRGs, and other payment methods. See Reimbursement. Incentives are "implicit or explicit inducements that influence behavior. In the workplace, refers to financial or psychological rewards designed to motivate employees to perform above an established standard. Incentive wages are one way in which PROSPECTIVE payment systems encourage health care providers to use fewer procedures and make fewer office appointments. In contrast, the fee-for-service reimbursement system rewards providers for increasing UTILIZATION of health care services. Resource Allocation Societal or individual decisions about the equitable distribution of available resources. (MeSH) Resources The basic inputs to production - the time and abilities of individuals, natural resources such as land and capital http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (20 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course (facilities, equipment, etc.). (World Bank, 2001) Risk (actuarial) An actuary’s statement of the risk presented by a group of individuals, which is being considered for enrollment in health care

insurance. This risk statement is the basis for rating the group, i.e., determining the insurance premium to be charged. For community rating, the risk statement is for entire community; for experience rating, the statement is for a smaller group, such as the employees of a given corporation. Scarcity A situation in which the needs and wants of an individual or group of individuals exceed the resources available to satisfy them. Sensitivity Analysis A technique which repeats the comparison between inputs and consequences, varying the assumptions underlying the estimates. In so doing, sensitivity analysis tests the robustness of the conclusions by varying the items around which there is uncertainty. Socioeconomic Determinants of Health The entire range of individual and collective factors-and their interactions-that affect the health of the people of Canada. These factors may include income and social status; social support networks; education; employment and working conditions; social environments; physical environment; personal health practices and coping skills; healthy child development; culture; health services; gender; biology and genetic endowment. (Health Canada) Socioeconomic Factors Social and economic factors that characterize the individual or group within the social structure. Sociology A social science dealing with group relationships, patterns of collective behavior, and social organization. (MeSH) State Children's' Health Insurance Program (SCHIP) http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (21 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course A largely federally funded Medicaid program designed to help states expand health insurance to children whose families earn too much for traditional Medicaid but not enough to afford private health insurance. Self Insured Plan Plan offered by employers and other groups who directly assume the major cost of health insurance for their employees or members. Firms that self-insure generally obtain state tax benefits and freedom from mandated benefits. Statistical Methods The arithmetical tests that statisticians and health economists use to derive meaning from data. Technical Efficiency Assesses whether a given output can be achieved by using less of one input while holding all other inputs constant. This concept is related to cost-effectiveness. See also Costeffectiveness and Cost-effectiveness analysis. Third party payer In health care finance, this is an insurance carrier, Medicare, and Medicaid or their government-contracted intermediary, managed-care organization, or health plan that pays for hospital or medical bills instead of the patient. Also know as “third party carrier”. Underinsured Refers to people who have some type of health insurance, such as catastrophic care, but not enough insurance to cover all their health care costs. (Nevadans) Uninsured (MeSH uses the term Medically Uninsured) Individuals or groups with no or inadequate health insurance coverage. Those falling into this category usually comprise three primary groups: the medically indigent (MEDICAL INDIGENCY); those whose clinical condition makes them medically uninsurable; and the working uninsured. Utility http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (22 of 26)5/31/2007 7:14:38 AM Health Economics Information Resources: A Self-Study Course AcademyHealth. Glossary of Terms Commonly Used in Health Care. 2004 edition. Washington, D.C.: AcademyHealth, 2004. [also

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2

accruing to a person from the consumption of a good or service. This concept is applied in health care to mean the individual's valuation of their state of well-being deriving from the use of health care interventions. In brief, utility is a measure of the preference for, or desirability of, a specific level of health status or specific health outcome. (Source Kielhorn A. and Graf von der Schulenburg J.M. The health economics handbook. 2nd ed. Chester. Adis International. 2000) Utilization The level of use of a particular service over time. (Managed) Utilization Review Evaluation of the necessity, appropriateness, and efficiency of the use of health care services, procedures, and facilities. In a hospital, this includes review of the appropriateness of admissions, services ordered and provided, length of a stay, and discharge practices, both on a concurrent and retrospective basis. Utilization review can be done by a peer review group, or a public agency. (AcademyHealth) Value of Life The intrinsic moral worth ascribed to a living being. (MeSH) Voluntary Care Care, usually by a family member. The market price is zero but there is an opportunity cost in terms of the alternative ways in which the carer could have utilized the time. A value would have to be imputed, perhaps based on the salary of a paid caregiver. Willingness-to-pay (WTP) A technique which aims to assign a value to health benefits by directly eliciting individual preferences in the views of samples of the general public who are asked how much they would be prepared to pay to accrue a benefit or to avoid certain events. Definitions are compiled from the following sources: http://www.nlm.nih.gov/nichsr/edu/healthecon/glossary.html (23 of 26)5/31/2007 7:14:38 AM Health Economics Online Course Search NLM Web Site NLM Home | Contact NLM | Site Map | FAQs National Information Center on Health Services Research and Health Care Technology (NICHSR) NICHSR Home | About Us | Contact Us Home > Health Services Research & Public Health > NICHSR About these Modules Home Introduction and Purpose Index The Modules Modules Available for Study: Module 1, Part 1: Scope of Health Economics Module 1, Part 2: Key Information Sources Module 2: Sources and Characteristics of Information Module 3: Identification and Retrieval of Published Health Economic Evaluations Module 4 : Principles of Critical Appraisal of Health Economic Evaluations Health Economics Information Resources: A SelfStudy Course Key General Economics Concepts This section is intended to present the names and descriptions of concepts that were not covered in the four health economics modules available for study. Two academics with many years experience between them teaching health economics courses suggested that you might wish to explore these concepts on your own by reading some of the available health economics textbooks and articles listed in the bibliography. Additional general and health economics concepts include: Competitive equilibrium model A model that assumes utility maximization on the part of consumers and profit maximization on the part of firms, along with competitive markets and freely determined prices. Cost concepts Differences in cost concepts such as direct and indirect (or overhead) costs (accountants' language) and fixed and variable costs (economists' language) Demand curve A graph of demand showing the downward-sloping relationship between price and quantity demanded. (Taylor) Diminishing marginal utility of income

http://www.nlm.nih.gov/nichsr/edu/healthecon/key.html (1 of 4)5/31/2007 7:15:39 AM Health Economics Online Course Related Content: Glossary of Terms Key General Economics Concepts Bibliography Web Sites Quizzes/Review Evaluation Contact Us Makes insurance worthwhile to risk averse individuals Externalities An externality is the situation in which the costs of producing or the benefits of consuming a good spill over onto those who are not producing or consuming the good. (Taylor) Health production function A production function is a relationship that shows the quantity of output for any given amount of input. Health utility Utility is a numerical indicator of a person's preferences in which higher levels of utility indicate a greater preference. (Taylor) Macroeconomics The branch of economics that examines the workings and problems of the economy as a whole—GDP growth and unemployment. Microeconomics The branch of economics that examines individual decisionmaking at firms and households and the way they interact in specific industries and markets. The margin (marginal cost) Marginal cost is the change in total costs due to a one-unit change in quantity produced. (Taylor) Marginalism The incremental determination of how much of some service or product to produce. Price and income elasticities Market sensitivities to changes in prices and incomes. Price elasticity of demand is the percentage change in the quantity demanded of a good divided by the percentage change in the price of that good. Price elasticity of supply is the percentage change in quantity http://www.nlm.nih.gov/nichsr/edu/healthecon/key.html (2 of 4)5/31/2007 7:15:39 AM Health Economics Online Course supplied divided by the percentage change in price. (Taylor) Pricing in competitive and monopoly markets Price refers to a particular good and is defined as the amount of money or other goods that one must pay to obtain the good. Income elasticity of demand the percentage change in quantity demanded of one good divided by the percentage change in income. (Taylor) Supply and demand Supply - a relationship between price and quantity supplied. Demand - a relation- ship between price and quantity demanded. (Taylor) Supply curve A graph of supply showing the upwardsloping relationship between price and quantity supplied. (Taylor) References Glossary and Resources, Economics and Ethics Modules. [online] Site URL. Byrns, Ralph. A Glossary of Economics Terms. January 2003. [online] Site URL. Glossary, in: Taylor, John B. Economics, 3d edition. Stanford: Stanford University Press, [n.d.] [online] Site URL. Previous Next

http://www.nlm.nih.gov/nichsr/edu/healthecon/key.html (3 of 4)5/31/2007 7:15:39 AM Health Economics Information Resources: A Self-Study Course Search NLM Web Site NLM Home | Contact NLM | Site Map | FAQs National Information Center on Health Services Research and Health Care Technology (NICHSR) NICHSR Home | About Us | Contact Us Home > Health Services Research & Public Health > NICHSR Printer-friendly Version About these Modules Home Introduction and Purpose Index The Modules Modules Available for Study: Module 1, Part 1: Scope of Health Economics Module 1, Part 2: Key Information Sources Module 2: Sources and Characteristics of Information Module 3: Identification and Retrieval of Published Health Economic Evaluations Module 4 : Principles of Critical Appraisal of Health Economic Evaluations Related Content: Health Economics Information Resources: A SelfStudy Course Bibliography Bolded items are cited in the text. There are links back to the page where

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Williams. Culyer, A.J. and Maynard, A. (eds.). http://www.nlm.nih.gov/nichsr/edu/healthecon/bibliography.html (6 of 7)5/31/2007 7:16:03 AM Health Economics Information Resources: A Self-Study Course Cheltenham. Edward Elgar. 1997. p.46 (Fig.4.1: Williams' "Structure of Discipline" diagram). Zarnke, KB; Levine, MAH; O'Brien, BJ. Costbenefit analyses in the health-care literature: don't judge a study by its label. Journal of Clinical Epidemiology 1997;50:813-822. Bolded entries - mentioned in presentation Previous Next Last reviewed: 11 December 2006 Last updated: 11 December 2006 First published: 05 December 2003 Metadata| Permanence level: Permanent: Dynamic Content Copyright, Privacy, Accessibility U.S. National Library of Medicine, 8600 Rockville Pike, Bethesda, MD 20894 National Institutes of Health, Health & Human Services http://www.nlm.nih.gov/nichsr/edu/healthecon/bibliography.html (7 of 7)5/31/2007 7:16:03 AM Health Economics Information Resources: A Self-Study Course Search NLM Web Site NLM Home | Contact NLM | Site Map | FAQs National Information Center on Health Services Research and Health Care Technology (NICHSR) NICHSR Home | About Us | Contact Us Home > Health Services Research & Public Health > NICHSR Printer-friendly Version About these Modules Home Introduction and Purpose Index The Modules Modules Available for Study: Module 1, Part 1: Scope of Health Economics Module 1, Part 2: Key Information Sources Module 2: Sources and Characteristics of Information Module 3: Identification and Retrieval of Published Health Economic Evaluations Module 4 : Principles of Critical Appraisal of Health Economic Evaluations Health Economics Information Resources: A SelfStudy Course Selected Web sites – Health Care Economics Research This section links you to useful health economics resources on the Web. Bureau of Labor Statistics. U. S. Department of Labor. Data Home Price and expenditure data. Retrieve statistics, create tables. Bureau of Labor Statistics Programs and Surveys Home Program and survey documentation, detailed statistics, FAQS, contact information. Bureau of Primary Health Care – Health Resources and Services Administration. U. S. Department of Health and Human Services Includes databases on medically underserved, health professional shortages, others. Community Health Status Indicators Project Health Resources Services Administration, U. S. Department of Health and Human Services 3,082 reports of health status indicators, one for each county in the nation. (Note: Data retired as of October 11, 2002) Community Tracking Study - Center for Studying Health System http://www.nlm.nih.gov/nichsr/edu/healthecon/websites.html (1 of 7)5/31/2007 7:18:00 AM Health Economics Information Resources: A Self-Study Course Related Content: Glossary of Terms Key General Economics Concepts Bibliography Web Sites Quizzes/Review Evaluation Contact Us Change Community Reports provide information and insights about developments in the 12 communities that HSC is studying intensively over time to better understand the changing health system and variations across markets. The Center for Studying Health System Change is a nonpartisan research organization and "seeks to provide objective, incisive analyses that lead to sound policy and management decisions, with the ultimate goal of improving the health of the American public. Consumer Expenditure Survey - Bureau of Labor Statistics Details of consumer health care expenditures Consumer Price Indexes - Bureau of Labor Statistics The

Consumer Price Indexes (CPI) program produces monthly data on changes in the prices paid by urban consumers for a representative basket of goods and services. Current Population Survey – U.S. Census Bureau Annual Demographic Survey (March CPS Supplement) includes health insurance coverage. Dartmouth Atlas of Health Care "The Atlas project brings together researchers in diverse disciplines - including epidemiology, economics, and statistics - and focuses on the accurate description of how medical resources are distributed and used in the United States. Data User's Reference Guide* - Centers for Medicare & Medicaid Services (CMS) "The purpose of the Data Users Reference Guide is to introduce health care data users to the Medicare and Medicaid program data maintained by CMS." Details of raw data files, intended for use by researchers and analysts. Directory of Data Resources* - Department of Health and Human Services http://www.nlm.nih.gov/nichsr/edu/healthecon/websites.html (2 of 7)5/31/2007 7:18:00 AM Health Economics Information Resources: A Self-Study Course "a compilation of information about virtually all major data collection systems sponsored by the U.S. Department of Health and Human Services ..." Finding and Using Health Statistics: A Self Study Course** - National Information Center on Health Services Research & Health Care Technology (NICHSR) A very useful interactive tutorial. HCUPnet– Healthcare Cost and Utilization Project - Agency for Healthcare Research and Quality (AHRQ) "...national statistics and trends and selected State statistics about hospital stays." Health Economic Resources on the Internet – University of York Some full text journals, annotated list of links Health Economics and Decision Science - University of Sheffield A research and education center for health care resource allocation decision-making working with both international and UK-based public and private agencies. The Health Plan Employer Data and Information Set (HEDIS®) – National Committee for Quality Assurance Performance measures for managed health care plans for purchasers and consumers. Health Economics Research Unit – University of Aberdeen Abstracts of research, links to sites and more Health Policy Center – Urban Institute "...primarily concerned with issues related to how the dynamics of the health care market affect health care financing, costs, and access." Health Services and Sciences Research Resources*** - National Information Center on Health Services Research & Health Care Technology (NICHSR) Searchable database of information about research datasets and instruments/indices. http://www.nlm.nih.gov/nichsr/edu/healthecon/websites.html (3 of 7)5/31/2007 7:18:00 AM Health Economics Information Resources: A Self-Study Course Includes description of and links to resources. Very useful finding aid. Health Services Research Internet Sites National Information Center on Health Services Research & Health Care Technology (NICHSR) Selected HSR Web Sites - see especially Health Policy and Economics and also Data Sets and Data Sources Health Services Research Resources – Leonard Davis Institute, University of PA Links to associations and alliances, foundations and organizations, research and policy groups. Health Statistics – University of Pittsburgh Health Sciences Library System Useful annotated list. Inter-University Consortium for Political and Social Research (ICPSR) A membership-based organization with over 400

member colleges and Universities around the world. Maintains and provides access to a vast archive of social science data, including Health and Medical Care Archive. Some datasets are publicly available. The site includes access and contact information for members and non-members. Kaiser Family Foundation State Health Facts Online Up-to-date health data on all 50 states, including demographic data and the economy, health status, health care costs, budgets, financing, and health insurance Knowledge @ Wharton (select Health Economics) "…a bi-weekly online resource that offers the latest business insights, information and research from a variety of sources. Includes interviews with industry leaders and Wharton faculty, articles based on the most recent business research, book reviews, conference and seminar reports…" Full text of faculty working papers available. Free, but registration required. (Direct link) Leonard David Institute of Health Economics – University of Pennsylvania http://www.nlm.nih.gov/nichsr/edu/healthecon/websites.html (4 of 7)5/31/2007 7:18:00 AM Health Economics Information Resources: A Self-Study Course A cooperative venture among Penn's schools of Dentistry, Medicine, Nursing, and Wharton. Description of research programs, full text of LDI Issue Briefs. Medical Expenditures Panel Survey - Agency for Healthcare Research & Quality "…data on the specific health services that Americans use, how frequently they use them, the cost of these services, and how they are paid for, as well as data on the cost, scope, and breadth of private health insurance held by and available to the U.S. population." Medicare.gov "The Official U.S. Government Site for People with Medicare" National Association of Health Data Organizations (NAHDO) "NAHDO is a not-for-profit membership organization dedicated to strengthening the nation's health information system." The site contains full text of current articles, as well as association news and information. National Center for Health Statistics NCSH is the nation's primary agency for vital and health statistics. Includes data on health status, use of health care, lifestyle, as well as on illness and disability. National Health Accounts (CMS) (Formerly - National Health Care Expenditures) Comprehensive annual data on all national expenditures related to health care. National Vital Statistics System – National Center for Health Statistics Data on births, deaths, marriages, fetal deaths. Pennsylvania Health Care Cost Containment Council (note: many states have similar Web sites) Financial and performance analysis of hospitals, reports on health plans, benefits and care issues, and more.

http://www.nlm.nih.gov/nichsr/edu/healthecon/websites.html (5 of 7)5/31/2007 7:18:00 AM Health Economics Information Resources: A Self-Study Course Researchers (Information For) - Centers for Medicare and Medicaid Services (CMS) U.S. Dept. of Health and Human Services, [formerly, Health Care Financing Administration – HCFA] Downloadable Public Use Data Files on providers, costs, payments. Detailed statistics on Medicare, Medicaid, SCHIP. National Health Care Expenditures. And more… Resource Center – American Hospital Association Fast facts, statistics, studies, and links. Useful search feature. State Database – Urban Institute – New Federalism "This database includes information on the fifty states and the District of Columbia in areas including income security, health, child well-being, demographic, fiscal and political conditions, and social services." Statistical Resources on the Web – Health University of

Michigan Documents Center WHO Statistical Information System – World Health Organization “Health and health-related statistical information from the WHO Global Programme on Evidence for Health Policy” World Health Report 2002 – World Health Organization Health Systems – Improving Performance Full text in PDF format. Bolded entries - mentioned in presentation * - documentation/guide ** - recommended tutorial *** - finding aid Previous Next http://www.nlm.nih.gov/nichsr/edu/healthecon/websites.html (6 of 7)5/31/2007 7:18:00 AM Health Economics Information Resources: A Self-Study Course: Module 1 Search NLM Web Site NLM Home | Contact NLM | Site Map | FAQs National Information Center on Health Services Research and Health Care Technology (NICHSR) NICHSR Home | About Us | Contact Us Home > Health Services Research & Public Health > NICHSR Printer-friendly Version About these Modules Home Introduction and Purpose Index The Modules Modules Available for Study: Module 1, Part 1: Scope of Health Economics Module 1, Part 2: Key Information Sources Module 2: Sources and Characteristics of Information Module 3: Identification and Retrieval of Published Health Economic Evaluations Module 4 : Principles of Critical Appraisal of Health Economic Evaluations Related Content: Health Economics Information Resources: A SelfStudy Course The Scope of Health Economics Module 1 Quiz: Answer Key This page provides the correct responses to each of the questions from the quiz on the Scope of Health Economics. Each question is repeated, and includes the answer and an explanation. Quiz 1 (Module 1) 1. The benefits associate with the best alternative use of resource is called: A. Health economics B. Health resources C. Opportunity cost D. Alternative activities Explanation The aim of economics is to ensure that the chosen activities have benefits which outweigh their opportunity costs OR the most beneficial activities http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz1answers.htm (1 of 7)5/31/2007 5:10:59 AM Health Economics Information Resources: A Self-Study Course: Module 1 Glossary of Terms Key General Economics Concepts Bibliography Web Sites Quizzes/Review Evaluation Contact Us are chosen within the resources available. 2. The following is a list of the type of statistical date most often required in health economics. Which letter listed below does not belong in the list? A. financing health care B. epidemiological C. cost of care D. demographic E. nutrition data F. socioeconomic G. comparative Explanation Nutrition data, while important is generally not relevant to health economics as described in this module. 3. Select the specialist health economics journal/s within the economics discipline A. BMJ B. Health Economics C. B and D D. Journal of Health Economics E. A and B Explanation http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz1answers.htm (2 of 7)5/31/2007 5:10:59 AM Health Economics Information Resources: A Self-Study Course: Module 1 Health Economics and Journal of Health Economics investigate all aspects of health economics such as the theory and methods of economic analyses and theory and methods of health policy. 4. The site with substantial content on cost-QALY ratios is called A. The CEA Registry B. The Health Economic Evaluations Database (HEED) C. Evidence Based

Health Care D. The NHS Economic Evaluation Database (NHS EED) Explanation The CEA Registry (formerly known as the Harvard CUA Database) features a Reference list of studies that have used costs per QALY to measure health benefits 1976-1997. It contains a Comprehensive League table of Cost-QALY Ratios, a League table of cost-QALY ratios which adhere to the Washington Panel and a catalog of Preference Scores used for QALYs as well as a checklist used to appraise CUA studies. http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz1answers.htm (3 of 7)5/31/2007 5:10:59 AM Health Economics Information Resources: A Self-Study Course: Module 1 5. Value-added sources provide some additional information over and above bibliographic details. True or False? Explanation Value-added sources provide some additional information over and above bibliographic details. The nature and form of this information varies. Examples include: Evidence Based Health Care and ACP Journal Club. 6. The following is a list of disciplines, some of which relate to health economics. Which discipline does not belong in this list? A. Health Education B. Anthropology C. Health Services Research D. Statistical Methods E. Public Health / Epidemiology F. Psychology Explanation Health Economics incorporates the thinking of additional disciplines both within the health field and beyond. If we look beyond health, we must incorporate pure economics, finance and insurance, industrial organization, labor economics, public policy (and finance), sociology, and statistical methods into our thinking. Within the health arena, the disciplines of health services research, medicine,
http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz1answers.htm (4 of 7)5/31/2007 5:10:59 AM Health Economics Information Resources: A Self-Study Course: Module 1 medical ethics, psychology and public health / epidemiology must be considered when considering health economics. 7. PsycINFO and PAIS International do not contain health economics citiations. True or False? Explanation PsycINFO covers psychology and related disciplines including medicine, psychiatry and nursing. Use these and other search terms to retrieve health economics citations from this database: Budgets, Cost Containment, Costs and Cost Analysis, Economy, Health Care Costs, Money, and Resource Allocation. PAIS International covers public, social policy and the social sciences in general US focus. 8. Which of the following statements is untrue and does not belong in this list? Grey literature is characterized as material: A. Not published through regular bookpublishing channels B. Not subject to formal bibliographic control C. That can be difficult to identify and obtain D. That is generally available only in print (not electronic format) E. That can be country-specific Explanation
http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz1answers.htm (5 of 7)5/31/2007 5:10:59 AM Health Economics Information Resources: A Self-Study Course: Module 1 Grey literature is characterised as material that is not published through regular book-publishing channels, is not subject to formal bibliographic control (indexing for large bibiographic databases such as Medline), and can be difficult to identify and obtain; and lastly, it is often country-specific. The grey literature is available in print and digital formats. 9. The

HMIC – Health Management Information Consortium (UK) Database is the combined catalogs of the UK Department of Health, the King's Fund and the Nuffield Institute for Health. True or False? Explanation The HMIC - Health Management Information Consortium (UK) Database is the combined catalogs of the UK Department of Health, the King's Fund and the Nuffield Institute for Health. It is intended to provide valuable information for health managers and administrators in the areas of health policy, health economics, social policy and care and public health and primary care. The database contains about 300,000 citations. http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz1answers.htm (6 of 7)5/31/2007 5:10:59 AM Health Economics Information Resources: A Self-Study Course: Module 1 10. International initiatives such as OECD and WHO are not large providers of health data. True or False? Explanation International initiatives such as OECD and WHO (listed below) are large providers of health data. Did you score a 70% or above? If so, you've successfully completed the quiz on the Scope of Health Economics. You may now apply for a Certificate of Success. Continue on to the next module: Sources and Characteristics of Information. Previous Quiz Next Last reviewed: 11 December 2006 Last updated: 11 December 2006 First published: 08 December 2003 Metadata| Permanence level: Permanent: Dynamic Content Copyright, Privacy, Accessibility U.S. National Library of Medicine, 8600 Rockville Pike, Bethesda, MD 20894 National Institutes of Health, Health & Human Services http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz1answers.htm (7 of 7)5/31/2007 5:10:59 AM Health Economics Information Resources: A Self-Study Course: Module 1 Search NLM Web Site NLM Home | Contact NLM | Site Map | FAQs National Information Center on Health Services Research and Health Care Technology (NICHSR) NICHSR Home | About Us | Contact Us Home > Health Services Research & Public Health > NICHSR Printer-friendly Version About these Modules Home Introduction and Purpose Index The Modules Modules Available for Study: Module 1, Part 1: Scope of Health Economics Module 1, Part 2: Key Information Sources Module 2: Sources and Characteristics of Information Module 3: Identification and Retrieval of Published Health Economic Evaluations Module 4 : Principles of Critical Appraisal of Health Economic Evaluations Related Content: Health Economics Information Resources: A SelfStudy Course Sources and Characteristics of Information Module 2 Quiz: Answer Key This page provides the correct responses to each of the questions from the quiz on the Sources and Characteristics of Information. Each question is repeated, and includes the answer and an explanation. Quiz 2 (Module 2) 1. The National Health Accounts are associate with which agency? A. Agency for Health Care Policy and Research B. Centers for Medicare and Medicaid Services (CMS) C. NICHSR D. Centers for Disease Control and Prevention E. NIOSH Explanation http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz2answers.htm (1 of 7)5/31/2007 5:26:52 AM Health Economics Information Resources: A Self-Study Course: Module 1 Glossary of Terms Key General Economics Concepts Bibliography Web

Sites Quizzes/Review Evaluation Contact Us For the NHA, one needs just to consult the Centers for Medicare and Medicaid Services (CMS), formerly Health Care Financing Administration, homepage to find definitions of each category of medical service and source of funding, scope of the program, methodology of program, and source materials from which the NHA are developed. 2. Children with no insurance receive health care through a program called what? A. Medicare B. Social Security C. Maternal and Child Health Bureau D. State Children's Health Insurance Program (SCHIP) Explanation Children who might not otherwise receive medical attention may do so through the State Children?s Health Insurance Program (SCHIP). 3. When referring users to the NHA/NHE there are a number of limitations we should remember to tell them. Which item listed below is not a limitation? A. limitations of the data B. use of Website C. data definitions D. source materials E. methodologies used http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz2answers.htm (2 of 7)5/31/2007 5:26:52 AM Health Economics Information Resources: A Self-Study Course: Module 1 Explanation As is the case whenever consulting statistical information, users need to be aware of the limitations of the data. It is critical that users familiarize themselves with the definitions, sources, and methodologies used in creating the NHA in order to grasp what is being measured and how that measurement is being accomplished. 4. Medicare covers what percentage of which population? A. 95%of the elderly B. 20% of mothers and children C. 87% of adolescents D. 55% of the elderly E. 49% of children Explanation We're probably all most familiar with Medicare. This federal program provides a range of medical care benefits for persons aged 65 and over, disabled persons and their dependents and those suffering from chronic kidney disease. Medicare covers about 95% of our nation?s aged population, approximately 39 million in 2000. http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz2answers.htm (3 of 7)5/31/2007 5:26:52 AM Health Economics Information Resources: A Self-Study Course: Module 1 5. The National Health Accounts series has many important characteristics and aims to be comprehensive because it contains some/most/all of the main components of the health care system. Explanation The National Health Accounts series has many important characteristics and aims to be comprehensive because it contains all of the main components of the health care system. 6. Federal expenditures have decreased/increased between 1960 and 2000? Explanation As you might imagine the trend here is the reverse of that for private funding. Public funding has generally increased over the long term from roughly 25% in 1960 to 45.2% in 2000. This increase, especially since 1965, is largely a result of greater federal expenditures and much significant rise in federal spending is accounted for by the Medicare and Medicaid Programs. http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz2answers.htm (4 of 7)5/31/2007 5:26:52 AM Health Economics Information Resources: A Self-Study Course: Module 1 7. In the year 2000, spending on health care services and products represented what percentage of the U. S. Gross Domestic Product? A. 13.2 percent B. 6.9 percent C. 10.3 percent D. 7.9 percent Explanation Spending on health care services and products reached $1.3 trillion in

2000, which was up 6.9 percent from the previous year. This $1.3 trillion figure represents 13.2 percent of the U.S. Gross Domestic Product (GDP), or the total value of goods and services produced that year in the U.S. 8. People in OECD countries pay less for health per capita than people in the United State. True or False? Explanation The U.S. spends more on health care per capita but ranks very low with respect to overall health system performance.
http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz2answers.htm (5 of 7)5/31/2007 5:26:52 AM Health Economics Information Resources: A Self-Study Course: Module 1 9. When we look at the various categories of expenditures (health care dollars) and the percentages of total dollars spend for each in the year 2000, program Administration and Net Cost consumes which percentage of the spending on health care? A. 22% B. 9% C. 32% D. 6% E. 19% Explanation The pie chart that was used to characterize where the money went shows the various categories of expenditures and the percentages of total dollars spent for each. Hospital care accounted for 32% of the health care dollar. Physician and Clinical Services accounted for 22%. Other Spending - which includes dentist services, other professional services, home health, durable medical products, over-the-counter medicines and sundries, public health, research and construction - accounted for a hefty 24% with prescription drugs at 9%, nursing home care at 7%, and program administration at 6% of the total spending. http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz2answers.htm (6 of 7)5/31/2007 5:26:52 AM Health Economics Information Resources: A Self-Study Course: Module 1 10. The year with the most number of uninsured Americans (in millions) was: A. 1995 B. 1996 C. 1997 D. 1998 E. 1999 F. 2000 Explanation Those who had no health insurance in 1998 accounted for 44.3 million people total in the United States. Did you score a 70% or above? If so, you've successfully completed the quiz on the Sources and Characteristics of Information. You may now apply for a Certificate of Success. Continue on to the next module: Identification and Retrieval of Published Health Economics Evaluations. Previous Quiz Next Last reviewed: 11 December 2006 Last updated: 11 December 2006 First published: 08 December 2003 Metadata| Permanence level: Permanent: Dynamic Content Copyright, Privacy, Accessibility U.S. National Library of Medicine, 8600 Rockville Pike, Bethesda, MD 20894 National Institutes of Health, Health & Human Services
http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz2answers.htm (7 of 7)5/31/2007 5:26:52 AM Health Economics Information Resources: A Self-Study Course: Module 1 Search NLM Web Site NLM Home | Contact NLM | Site Map | FAQs National Information Center on Health Services Research and Health Care Technology (NICHSR) NICHSR Home | About Us | Contact Us Home > Health Services Research & Public Health > NICHSR Printer-friendly Version About these Modules Home Introduction and Purpose Index The Modules Modules Available for Study: Module 1, Part 1: Scope of Health Economics Module 1, Part 2: Key Information Sources Module 2: Sources and Characteristics of Information Module 3: Identification and Retrieval of

Published Health Economic Evaluations Module 4 : Principles of Critical Appraisal of Health Economic Evaluations Related Content: Health Economics Information Resources: A SelfStudy Course Identification and Retrieval of Published Health Economics Evaluations Module 3 Quiz: Answer Key This page provides the correct responses to each of the questions from the quiz on the Identification and Retrieval of Published Health Economics Evaluations. Each question is repeated, and includes the answer and an explanation. Quiz 3 (Module 3) 1. The variability in the quality of published health economic evaluation studies is not well documented. True or False Explanation The variability in the quality of published health economic evaluation studies is well documented in Jefferson, et al 2002a and Jefferson, et al 2002b. http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz3answers.htm (1 of 7)5/31/2007 6:55:39 AM Health Economics Information Resources: A Self-Study Course: Module 1 Glossary of Terms Key General Economics Concepts Bibliography Web Sites Quizzes/Review Evaluation Contact Us 2. The aim of economic evaluation is to ensure that the benefits from health care programs implemented are greater than the opportunity cost of such programs by addressing questions of _____ or _____. Select the correct answer from the list below. A. Interpretive efficiency or Inclusive efficiency B. Economic efficiency or Evaluative efficiency C. Allocative efficiency of Technical efficiency D. Informational efficiency or Requirements efficiency Explanation The aim of economic evaluation is to ensure that the benefits from health care programs implemented are greater than the opportunity cost of such programs by addressing questions of Allocative efficiency or Technical efficiency. Allocative efficiency assesses competing programs and judges the extent to which they meet objectives. Technical efficiency assesses the best way of achieving a given objective. 3. The MeSH term "cost-benefit analysis" is used to index ALL types of economic evaluation studies, not just cost-benefit studies. True or False? Explanation This statement is true. The MeSH term ?cost-benefit http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz3answers.htm (2 of 7)5/31/2007 6:55:39 AM Health Economics Information Resources: A Self-Study Course: Module 1 analysis? is used to index ALL types economic evaluation studies, not just cost-benefit studies. 4. Partial evaluations do not provide information on efficiency. True or False? Explanation It is important to remember is that PARTIAL EVALUATIONS DO NOT PROVIDE INFORMATION ON EFFICIENCY. 5. Important consequences may occur as a result of mislabeling. Mislabeling of partial evaluations as full economic evaluations can also result in the incorrect allocation of indexing terms at the point of inclusion into a bibliographic database and mislabeling will cause difficulties in identifying studies which are true economic evaluations. True or False? Explanation The answer is true as stated. http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz3answers.htm (3 of 7)5/31/2007 6:55:39 AM Health Economics Information Resources: A Self-Study Course: Module 1 6. Which of these statements about a FULL economic evaluation does not belong with the others? A. FULL health economic evaluations are easily identified because they consider costs. B. A FULL economic evaluation

requires the identification, measurement, and valuation of BOTH costs and consequences. C. A FULL economic evaluation requires the identification, measurement, and valuation of BOTH costs and consequences. D. A FULL economic evaluation compares BOTH the costs and consequences (effectiveness; benefits) of TWO or more interventions Explanation A FULL economic evaluation compares BOTH the costs AND consequences (effectiveness; benefits) of TWO or more interventions. A FULL economic evaluation requires the identification, measurement and valuation of BOTH costs and consequences. A FULL economic evaluation is the ONLY type of economic analysis that provides valid information on efficiency. Some studies consider costs but do not involve comparisons between interventions or do not relate costs to benefits; these are considered partial evaluation studies. http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz3answers.htm (4 of 7)5/31/2007 6:55:39 AM Health Economics Information Resources: A Self-Study Course: Module 1 7. EMTREE does not provide an individual indexing term for each type of economic evaluation methodology. True or False? Explanation The answer to this question is false. There is a clear distinction within EMTREE between the different types of economic evaluation methodologies. EMTREE provides an individual indexing term for each type of economic evaluation methodology. In addition, EMTREE provides an additional indexing term - ?economic evaluation? (explodes). The terms ? cost control? and ?cost of illness? appear as narrower terms under ?economic evaluation?. This use of these two terms is not strictly correct as these are partial evaluation study types. 8. Guidelines for conduct of an economic evaluation have been developed as a means of addressing the problem of quality variability in health economic evaluation studies. Guidelines may be categorized as those which address the conduct, reporting, or appraisal of economic evaluation studies. True or False? Explanation This statement is true; that is, guidelines have been developed as a means of addressing the problem of quality variability in health economic evaluation studies. Guidelines may be categorized as those which address the conduct, reporting, or appraisal of economic evaluation studies. http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz3answers.htm (5 of 7)5/31/2007 6:55:39 AM Health Economics Information Resources: A Self-Study Course: Module 1 9. This variability in the quality of published health economic evaluation studies has _____ implications for the identification and subsequent utilization of information on _____ in the health care decisionmaking process. A. insignificant / economics B. significant / systematic reviews C. no significant / retrieval D. significant / efficiency Explanation This variability has significant implications for the identification and subsequent utilization of information on efficiency in the health care decisionmaking process. 10. The following are a list of keywords. Which terms are correct MeSH terms used in retrieving economic evaluation studies? A. Cost-benefit analysis B. A and C C. Expansion costs D. A and E E. Costs and cost analysis Explanation http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz3answers.htm (6 of 7)5/31/2007 6:55:39

AM Health Economics Information Resources: A Self-Study Course: Module 1 A and E are correct. Cost-benefit analysis and Costs and cost analysis are both MeSH terms used in retrieving economic evaluation studies. Did you score a 70% or above? If so, you've successfully completed the quiz on the Identification and Retrieval of Published Health Economics Evaluations. You may now apply for a Certificate of Success. Continue on to the next module: Principles and Critical Appraisal of Health Economic Evaluations. Previous Quiz Next Last reviewed: 11 December 2006 Last updated: 11 December 2006 First published: 08 December 2003 Metadata| Permanence level: Permanent: Dynamic Content Copyright, Privacy, Accessibility U.S. National Library of Medicine, 8600 Rockville Pike, Bethesda, MD 20894 National Institutes of Health, Health & Human Services http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz3answers.htm (7 of 7)5/31/2007 6:55:39 AM Health Economics Information Resources: A Self-Study Course: Module 1 Search NLM Web Site NLM Home | Contact NLM | Site Map | FAQs National Information Center on Health Services Research and Health Care Technology (NICHSR) NICHSR Home | About Us | Contact Us Home > Health Services Research & Public Health > NICHSR Printer-friendly Version About these Modules Home Introduction and Purpose Index The Modules Modules Available for Study: Module 1, Part 1: Scope of Health Economics Module 1, Part 2: Key Information Sources Module 2: Sources and Characteristics of Information Module 3: Identification and Retrieval of Published Health Economic Evaluations Module 4 : Principles of Critical Appraisal of Health Economic Evaluations Related Content: Health Economics Information Resources: A SelfStudy Course Principles and Critical Appraisals for Health Economics Evaluations Module 4 Quiz: Answer Key This page provides the correct responses to each of the questions from the quiz on the Principles and Critical Appraisals for Health Economics Evaluations. Each question is repeated, and includes the answer and an explanation. Quiz 4 (Module 4) 1. Double-counting - counting the same cost twice - is a potential hazard in economic evaluation. True or False? Explanation Counting the same cost twice - double-counting - is a potential hazard in economic evaluation. An example of double-counting is counting the cost of a surgeon's time for an operation when that cost is already included in the fee. http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz4answers.htm (1 of 7)5/31/2007 7:13:26 AM Health Economics Information Resources: A Self-Study Course: Module 1 Glossary of Terms Key General Economics Concepts Bibliography Web Sites Quizzes/Review Evaluation Contact Us 2. There are three basic types of economic evaluation methodology: (1) cost-effectiveness analysis (CEA); (2) __________; and (3) cost-benefit analysis (CBA). What is the missing type? Select the correct answer from the list below. A. insurance benefits analysis B. technical efficiency analysis C. clinical efficiency analysis D. allocative efficiency analysis E. cost-utility analysis (CUA) Explanation There are three basic types of economic evaluation methodology: (1) cost-effectiveness analysis (CEA); (2) cost-utility analysis (CUA); and (3) cost-benefit analysis (CBA).. 3. Any economic evaluation where costs and benefits occur over a number of years should consider _________. (Fill in the blank with one of items from list below). A. discounting B. hypothesizing C.

alternative D. surgery Explanation Individuals' or society's preferences for when to http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz4answers.htm (2 of 7)5/31/2007 7:13:26 AM Health Economics Information Resources: A Self-Study Course: Module 1 incur costs and receive benefits is reflected in the discount rate. Any economic evaluation where costs and benefits occur over a number of years should consider discounting.. 4. Examples of health care resources include (but are not limited to) staffing, consumables such as supplies and equipment, overheads such as heating, lighting, cleaning, laundry services etc., and capital such as land, buildings and major items of equipment. True or False? Explanation This statement is true. Health care resources include staffing, consumables, overheads and capital.. 5. Cost benefit analysis (CBA) can be used to measure technical efficiency questions only. True or False? Explanation CBA can be used to measure both technical and allocative efficiency questions. http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz4answers.htm (3 of 7)5/31/2007 7:13:26 AM Health Economics Information Resources: A Self-Study Course: Module 1 6. Other related services costs relate to resources associated with community, ambulance, and voluntary services. As with health care resources they may be categorized as staffing, ________, overheads, and capital. A. research B. consumables C. buildings D. heating Explanation Other related services costs relate to resources associated with community, ambulance and voluntary services, As with health care resources they may be categorized as staffing, consumables, overheads, and capital.. 7. Are either or both of the following statements correct or incorrect? (Select the best answer). A. As a general rule cost effectiveness analysis and cost utility analysis require only health care costs to be collected. B. Cost benefit analysis requires all costs and benefits to be collected, no matter on whom they fall. A. Statement A: yes (A is incorrect) B. Statement A: no (A is correct) C. Statement B: no (B is correct) D. Statement B: yes (B is incorrect) E. Both statement A and statement B are correct F. Both statement A and statement B are http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/htdocs/nichsr/edu/healthecon/quiz4answers.htm (4 of 7)5/31/2007 7:13:26 AM Health Economics Information Resources: A Self-Study Course: Module 1 incorrect Explanation In fact, both statements are correct. As a general rule CEA and CUA require only health care costs to be collected. CBA requires all costs and benefits to be collected, no matter on whom they fall.. 8. The four main areas of resource use which may require specific identification and measurement of costs are: health care resources; other related services; clients and their families; and _______. (Fill in the missing area). A. time lost from usual activity B. randomized controlled trials C. clinical trials D. exercise Explanation Time lost from usual activity is the missing area. The four main areas of resource use which may require specific identification and measurement of costs are: health care resources; other related services; clients and their families; and time lost from usual activity.. http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/

htdocs/nichsr/edu/healthecon/quiz4answers.htm (5 of 7)5/31/2007 7:13:26 AM Health Economics Information Resources: A Self-Study Course: Module 1 9. Cost-effectiveness analysis (CEA) can sometimes be used to provide limited information on _______ through a ratio of extra cost to extra benefit produced (incremental cost-efficiency analysis). (Select the correct phrase from the following list). A. insurance benefits B. technical analyses C. technical efficiency D. allocative efficiency E. peer review Explanation CEA can sometimes be used to provide limited information on allocative efficiency through a ratio of extra cost to extra benefit produced (incremental cost-efficiency analysis).. 10. Two patients have different treatments for the same condition. In Year 1 person A has surgery costing $3000. Patient B begins drug treatment with drugs costing $1000. Over three years, and despite an inflation rate of 5%, by adjusting costs for the rate of inflation the two treatments are shown to be ________ in terms of resources used. A. much less efficient B. not as efficient C. more efficient D. equally efficient E. Much more efficient Explanation http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/ htdocs/nichsr/edu/healthecon/quiz4answers.htm (6 of 7)5/31/2007 7:13:26 AM Health Economics Information Resources: A Self-Study Course: Module 1 By adjusting costs for the rate of inflation the two treatments are shown to be equally efficient in terms of resources used. Each treatment has the same effect but different costs. With an inflation rate of 5% a cost of $1050 occurring in one year’s time is equivalent to $1000 ($1050/1.05) now. With an inflation rate of 5% a cost of $1102.5 occurring in two year’s time is equivalent to $1000 ($1102.5/1.0522) now. Use of unadjusted costs would lead to the conclusion that surgery is more efficient than drug therapy as it would appear less costly. Did you score a 70% or above? If so, you’ve successfully completed the quiz on the Principles and Critical Appraisals for Health Economics Evaluations. You may now apply for a Certificate of Success. Previous Quiz Next Last reviewed: 11 December 2006 Last updated: 11 December 2006 First published: 08 December 2003 Metadata| Permanence level: Permanent: Dynamic Content Copyright, Privacy, Accessibility U.S. National Library of Medicine, 8600 Rockville Pike, Bethesda, MD 20894 National Institutes of Health, Health & Human Services
http://teamsite.nlm.nih.gov/iw-mount/default/main/nlm/WOR...A/changstep/ htdocs/nichsr/edu/healthecon/quiz4answers.htm (7 of 7)5/31/2007 7:13:26 AM Health Economics Online Course Search NLM Web Site NLM Home | Contact NLM | Site Map | FAQs National Information Center on Health Services Research and Health Care Technology (NICHSR) NICHSR Home | About Us | Contact Us Home > Health Services Research & Public Health > NICHSR Printer-friendly Version About these Modules Purpose and Introduction Index The Modules Modules Available for Study: Module 1: Scope of Health Economics Key Information Sources Module 2: Sources and Characteristics of Information Module 3: Identification and Retrieval of Published Health Economic Evaluations Health Economics: Finding and Using Health Economics Resources Evaluation Please take a moment or two to answer these 10 questions. We will use the information collected to improve this and future online learning efforts. 1. These learning modules were easy to read and understand. Strongly agree Agree Neutral Disagree Strongly Disagree 2. These learning modules provided me with new

2

information. Strongly agree Agree Neutral Disagree Strongly Disagree 3. These learning modules were fun http://www.nlm.nih.gov/nichsr/edu/healthecon/evaluation.html (1 of 3)6/19/2007 5:54:27 AM Health Economics Online Course Module 4 : Principles of Critical Appraisal of Health Economic Evaluations Related Content: Glossary of Terms Key Health Economics Concepts Bibliography Web Sites Quizzes/Review Evaluation Contact Us to do. Strongly agree Agree Neutral Disagree Strongly Disagree 4. These learning modules will affect the way I think about health economics. Strongly agree Agree Neutral Disagree Strongly Disagree 5. How long did it take you to complete these learning modules, including filling out this satisfaction survey? Less than 1 hour Less than 2 hours more than 2 hours but less than 3 hours more than 4 hours I didn't keep track of the time 6. What did you like most about these learning modules? 7. What did you like least about these learning modules? http://www.nlm.nih.gov/nichsr/edu/healthecon/evaluation.html (2 of 3)6/19/2007 5:54:27 AM Health Economics Online Course 8. Where do you work? 9. If you work in public health, what is your primary role within public health; e.g., health educator, researcher, educator, researcher, nurse, epidemiologist? 10. Other comments/suggestions? Previous Next Last reviewed: 13 June 2006 Last updated: 13 June 2006 First published: 08 December 2003 Metadata| Permanence level: Permanent: Dynamic Content Copyright, Privacy, Accessibility U.S. National Library of Medicine, 8600 Rockville Pike, Bethesda, MD 20894 National Institutes of Health, Health & Human Services http://www.nlm.nih.gov/nichsr/edu/healthecon/evaluation.html (3 of 3)6/19/2007 5:54:27 AM

THE ECONOMICS OF PATIENT SAFETY

THE ECONOMICS OF PATIENT SAFETY From analysis to action | 1 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 THE ECONOMICS OF PATIENT SAFETY From analysis to action PUBE 2 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Table of contents | 3 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 AHRQ DALY CDC FDA EU HAC ICER IMF ICT IT GBP GDP GWP NHS OECD P4P QALY QoL ROI UK US USD WHO WTP Agency for Healthcare Research and Quality Disability Adjusted Life Year Centers for Disease Control and Prevention (US) Food and Drug Administration (US) European Union Hospital-Acquired Condition Incremental Cost-Effectiveness Ratio International Monetary Fund Information Communication Technology Information Technology Great Britain Pound Gross Domestic Product Gross World Product (Global GDP) National Health Service (United Kingdom) Organisation for Economic Co-operation and Development Pay for Performance Quality-Adjusted Life Year Quality of Life Return on Investment United Kingdom United States United States Dollar World Health Organization Willingness to Pay General acronyms and abbreviations 4 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 AE ADE ADR CAUTI CDS CLABSI COPD CPOE CQR DVT EHR EMR HAI HAP HAUTI PE PI PMS PU RNS SSI UTI VAP VTE Adverse Event Adverse Drug Event Adverse Drug Reaction Catheter-Associated Urinary Tract Infection (see also HAUTI) Clinical Decision Support Central-Line Associated Blood Stream Infection Chronic Obstructive Pulmonary Disease Computerised Provider Order Entry Clinical Quality Registry Deep Vein Thrombosis Electronic Health Record Electronic Medical Record Healthcare-Associated Infection / Hospital-Acquired Infection Healthcare-Associated Pneumonia Healthcare-Associated Urinary Tract Infection (see also CAUTI) Pulmonary Embolism Pressure Injury Patient Monitoring Systems Pressure Ulcer

Result Notification Systems Surgical Site Infection Urinary Tract Infection Ventilator-Associated Pneumonia Venous Thromboembolism Clinical acronyms and abbreviations | 5 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 The work presented here was undertaken by the OECD to provide a strategic background report for the Patient Safety Priority within the G20 Health Working Group (HWG) 2020. It was commissioned by the Saudi Government through the G20 Saudi Secretariat 2020. The authors, Luke Slawomirski and Niek Klazinga, would especially like to acknowledge Dr. Abdulelah Alhawsawi, former Director-General for Saudi Patient Safety Center, for his input and support. Special thanks to Niall Johnson, Alexander Carter and Soren Rud Kristensen for their helpful suggestions, ideas and permission to cite preliminary research. Within the Health Division of the OECD, the authors would like to thank Kate de Bienassis, Valerie Paris, Martin Wenzl and Eliana Barrenho for their input, and Nick Tomlinson, Francesca Colombo, Mark Pearson and Stefano Scarpetta for their feedback and guidance. Copyright: This document and any map included herein are without prejudice to the status of or sovereignty over any territory, to the delimitation of international frontiers and boundaries and to the name of any territory, city or area. © OECD 2020 Acknowledgements 6 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 • Over 1 in 10 patients continue to be harmed from safety lapses during their care. Globally, unsafe care results in well over 3 million deaths each year. The health burden of harm is estimated at 64 million Disability-Adjusted Life Years (DALYs) a year, similar to that of HIV/AIDS. • Most of this burden is felt in low- to middle-income countries (LMICs). Recent estimates suggest that as many as 4 in 100 people die from unsafe care in the developing world. • The SARS-cov-2 pandemic, known as covid-19, has, among many other things, brought home the real risk of patient harm. The estimated proportion of hospital-acquired covid-19 cases ranges from 12.5% to 44%. As much as a third of these cases are reported to be healthcare staff. • Unsafe care also has high financial and economic costs. In developed countries, the direct cost of treating patients who have been harmed during their care approaches 13% of health spending. Excluding safety lapses that may not be preventable puts this figure at 8.7% of health expenditure. This amounts to USD 606 Billion a year, just over 1% of OECD countries' combined economic output. • The indirect economic and social burden of unsafe care is even greater, exerting a far from negligible brake on productivity and growth. Based on willingness to pay, the social cost of patient harm can be valued at USD 1 to 2 trillion a year. A human capital approach suggests that eliminating harm could boost global economic growth by over 0.7% a year. This compounds to more than USD 29 trillion, or about 36% of current global output over a decade. • Governments, health systems and providers have a duty to protect patients and the public from harm. Moving from analysis to action requires sober and rational decisions on how safety strategies, programmes and interventions can be implemented in a context of limited resources to generate the best value and return on investment (ROI) across a system. • Improving safety requires a whole of system approach, with the value created by implementing and investing in mutually re-enforcing interventions within a

policy framework encompassing all health system strata (see Figure A). The importance coordinating efforts has been recently highlighted by the responses to the covid-19 pandemic where, in many countries, agencies within and outside health systems have harmonised efforts quickly and effectively to manage risk and minimise harm from the outbreak. Key findings | 7 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Figure A. Clinical- organisational- and system-level strategies can deliver ROI and value when implemented in concert Source: Authors • The foundations for system resilience and a capacity to minimise harm are found in strong safety governance, a 21st century information infrastructure, and sufficient staffing with a workforce skilled in handling safety risks in complex, dynamic environments, working in a supportive and just safety culture that values continuous learning and improvement. • A national agency with well-defined objectives can be a powerful institution to enhance patient safety through better governance, oversight, and support of all health system actors. It is a worthwhile investment in most contexts. • Digital technologies can reduce harm improving information and communication. They represent a good return on investment (ROI) at the margin, and over the medium-term if implemented effectively and as part of an overarching national strategy. • At the clinical level, the strongest evidence points to interventions that target infections, blood clots (VTE), pressure ulcers and falls. Reducing these harms represents the greatest value for money. For example, every dollar invested in proven strategies to prevent 8 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 healthcare-associated infections delivers a 7-fold return. Better communication, especially at the points where patients transition between care settings, is also proven to reduce harm at relatively low cost • Patient-centred care, better health literacy and enhanced personal risk awareness is an important part of any harm-minimisation strategy. It should attract investment at the organisational and the system level. • Multi-modal, systemic approaches can be effective even in complex and fragmented health systems. The Medicare hospital-acquired complication (HAC) Reduction Programme in the United States, for example, is estimated to have saved 25 000 lives and 7.7 billion dollars over 3 years. • Better alignment of clinical, corporate, and professional risk management across the system is necessary. Currently, the full impact and costs of harm are not factored into decisions on improving safety. Also, in complex, fragmented health systems, the professional and financial impact of a safety lapse is most of the time felt further along the patient journey and not where a safety lapse occurred. Improving safety will be more difficult without addressing this. • Acting on patient safety requires leadership and communication, political will, and investment. Transparency across a health system is also integral to begin improving safety and reducing harm. This can only be achieved through investing in a modern information infrastructure, but also relies on sound governance, accountability and proactive leadership. • The analysis is clear: unsafe care kills millions, and harms tens of millions of people each year. It also exerts a great economic cost on health systems and society, consuming valuable resources that could be put to productive uses elsewhere. Much of this can be prevented through concerted action and adequate investment. The time for action is now. | 9 THE ECONOMICS OF PATIENT SAFETY FROM

ANALYSIS TO ACTION © OECD 2020 Unsafe care resulting in unnecessary patient harm1 continues to inflict a considerable toll on individuals, health systems and economies. Based on previous and recent evidence analysed for this report, harm resulting from health care remains a major global public health issue. Unsafe care results in over 3 million global deaths each year and exerts a similar global health burden to HIV/AIDS or road accidents. It also incurs major financial and economic costs. In developed countries, about 1 in 10 dollars spent on health care is diverted to treating the effects of safety lapses, and patient harm reduces global economic output by trillions of dollars every year. The awareness of patient safety and its importance has grown in recent years. Bodies such as the World Health Organization (WHO), European Union (EU) and the G20 have elevated the issue on the crowded public health agenda. While patient harm incurs a huge toll on individuals and societies, much of it can be prevented through changes in practice and behaviour, better policy, and considered investment. The potential for good economic returns and value creation is there. But the recent attention has not yet been translated to enough action to address the patient safety problem worldwide, and given the scale of the problem, intervention and investment are still relatively modest. This must change. At the time of writing this report (September 2020), the SARS-cov-2 pandemic was presenting another major global public health and economic challenge. While the world-wide death count had exceeded 950 000, the global response has, overall, been swift, decisive and significant. An immense amount of resources has been mobilised to protect the public and economies. Health systems have been quickly re-organised (some have even nationalised) to deal with the threat. Greater collaboration is evident across sectors, settings and silos. The immediate concerns have been with assuring sufficient and timely capacity for managing infection risk (protective equipment), diagnoses (tests) and treatment (ventilators/ICU/skilled professionals), with development of vaccines and treatments occurring in parallel. The pandemic has also reinforced the importance of the existing structures and mechanisms that maintain patient safety to ensure that no more harm is caused by the interventions and measures than is prevented by them. It has also brought home the risks of healthcare-associated harm. A systematic review using data up to 31 March 2020 estimated that 44% of covid-19 cases were nosocomial – acquired in hospital by patients who were admitted for other reasons. 2 In previous SARS and MERS pandemics, 33% and 56% of all diagnosed cases were nosocomial (Zhou et al. 2020). Other studies estimate the proportion of nosocomial covid-19 cases at 12.5% and 15% (B. Carter et al. 2020; Rickman et al. 2020). 1 Key terms and definitions are provided in Box 1. 2 Notably, healthcare workers comprised a third of cases. 1. Introduction 10 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Box 1. Key definitions Harm is defined by the WHO as “impairment of structure or function of the body and/or any deleterious effect arising therefrom, including disease, injury, suffering, disability and death. Harm may be physical, social or psychological” (WHO 2004). A patient is a person receiving health care (a medical intervention, procedure or diagnostic test). The term can also encompass the person’s family, carer(s) or other surrogates. Patient harm

is any unintended and unnecessary harm resulting from, or contributed to by, health care. This includes the absence of indicated medical treatment. An adverse event is an incident during care that results in patient harm. Common types of adverse events referred to in this report include: • Adverse drug events (ADEs) – the result of medication error • Healthcare-associated infections (HAI) (sometimes also referred to as hospital-acquired or nosocomial infections) • Patient falls • Pressure ulcers (PU) • Venous thromboembolism (VTE) – comprising deep vein thrombosis (DVT) or pulmonary embolism (PE) • Diagnostic error (incorrect or delayed diagnosis) An error is the failure to carry out a planned action as intended or application of an incorrect plan through either doing the wrong thing (commission) or failing to do the right thing (omission) at either the planning or execution phase of healthcare intervention. Errors may not necessarily cause harm. Patient safety is the reduction of risk of unnecessary harm associated with health care to an acceptable minimum. An acceptable minimum refers to the collective notions of current knowledge, resources available and the context in which care was delivered and weighed against the risk of non-treatment or alternative treatment. Source: Slawomirski, Auraaen, and Klazinga (2017) | 11 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 The economic impact of the covid-19 crisis has also been recognised and reacted to swiftly. In many cases, this will lead to some reflection on optimal investment in health systems. The pandemic has served to underscore the importance of timely and reliable data, and the institutional arrangements within a health system to assure safe care in periods of unexpected upscaling and downscaling. It has also emphasised the key role of political leadership in ensuring a successful response. Covid-19 has shown that governments, health systems and healthcare providers can act swiftly, decisively and in unison to protect the public. While some countries have done better than others, change is possible if the will and urgency are there. Responding to, and limiting the impact of, the outbreak is rightly seen as everybody's responsibility. The contrast with action to improve patient safety over the past decades is stark. For example, the pandemic response appears to have achieved what hand hygiene proponents have been working towards for years -- and may yet have the corollary benefit of reducing healthcareassociated infections in the future. The challenge is to harness the momentum and create the urgency to address the problem of unsafe care. Governments, whose principal responsibility is to protect the public from harm, play a critical role as does every person and institution involved in health. Safety must be everybody's responsibility. An essential part is to invest the right amount of resources that is commensurate with the size of the problem and what it will take to address. This, the next instalment of OECD reports on the economics of patient safety, attempts to guide G20 policy makers along a path that can achieve the goal of reducing harm to an acceptable minimum. It first quantifies the global burden and the cost of patient harm. Such analyses are important to establish urgency and a call for action. They also inform policy makers about the total costs of harm, which needs to be accurate and timely to guide optimal levels of investment in prevention. Measurement, information and knowledge are a key part of improving patient safety. As such, they also require adequate investment.

The report then moves from analysis to policy action. It presents the latest evidence on how the greatest returns can be derived from investing in patient safety. It seeks to assess a range of interventions and strategies -- implemented at the clinical, organisation and system levels – to reduce the burden of unsafe care across a health system. While previous reports began this discussion by presenting findings of a nominal survey of experts, this iteration tries to review and solidify the previous findings with empirical evidence. Findings suggest that reducing patient harm is one of the best ways to drive value in health care. Safety provides a way to optimise both the numerator (outcomes) and denominator (costs) of the value function. Not many other investments in health care can lay claim to that. But the task for policy makers is more complicated than to select a set of interventions based on their individual cost-effectiveness or return on investment (ROI). Firstly, the evidence still contains several gaps, and high-quality economic evaluation of different interventions are relatively sparse. Secondly, available research methods mean that finding causal links between interventions and outcomes favours those targeting specific types of harm in the clinical setting over broader, crosscutting strategies applied across organisations and systems. Improving safety is a complex, sociotechnical undertaking requiring changes in practice and behaviour across the board – from patients and providers to payers, regulators and policy makers. 12 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Specific interventions work best if implemented in an enabling policy and organisational environment context. Across an entire health system, reducing harm is best approached using a framework of governance, resilience, culture and transparency. It also relies on better alignment of clinical, corporate, and professional risk, and a serious evaluation of the structures and institutions that dictate incentives and behaviour across a health system. The policy challenge is to apply the evidence to the local context to best deploy scarce resources across the range of available programs and interventions. Meanwhile, a degree of experimentation to find new ways of improving safety should be encouraged. In a world of finite resources, achieving all of this requires inevitable trade-offs. A deliberative approach is needed, based on value, but cognisant of system complexity and validity of decisions and outcomes from a societal perspective. | 13 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 The incidence and the impact of patient harm have been established in numerous studies conducted over the past few decades. This section provides an update on the extent of harm, its health burden as well as its direct and indirect economic costs. Previous OECD reports on the economics of safety focused on individual settings, providing disaggregated figures on direct costs of harm (Auraaen, Klazinga, and Slawomirski 2018; de Bienassis, Llena-Nozal, and Klazinga 2020; Slawomirski, Auraaen, and Klazinga 2017). Here, the direct financial costs across entire OECD health systems (including inpatient/acute, primary/community, and long-term care) are estimated. Direct costs are the health system resources needed to ameliorate the effects and consequences (sequelae) of patient harm. This includes additional diagnostic testing, acute, non-acute and other health system activity (including administrative actions) that would not otherwise have been

needed had the patient not been harmed. Direct costs exclude financial assistance and compensation paid to harmed patients and/or their families as a result of harm. These costs should be considered in terms of dollars but also the alternative ways the resources could be deployed. Because healthcare resources are scarce, providing additional treatment and attention to harmed patients requires diversion from other uses where benefits are generated: diagnostic equipment, pharmaceuticals, hospital beds and, of course, the time and attention of highly-trained healthcare staff -- nurses, midwives, physicians and allied health professionals -- who provide direct care to patients and are considered the first and last line of defence against patient harm. The foregone benefits of these alternative resource deployments incur real, opportunity costs. Each time a harmed patient requires additional care, another patient misses out or has to wait for care. Reducing safety-related harm reduces this cost, freeing up scarce capacity that can be used more effectively to achieve important ends. Indirect costs cover all other downstream consequences of unsafe care on the economy and society. Based on a human capital approach, these costs comprise inter alia lost productivity (of patients as well as their families and informal carers), lost taxation revenue as well as higher 2. Unsafe care continues to incur a substantial burden on individuals, health systems and societies 14 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 welfare payments and perhaps also financial compensation.3 Indirect costs can also include the lost wages and decreased productivity of health workers and professionals involved in patient harm, who are often described as the 'second victims' of unsafe care. Indirect costs can also be calculated using the willingness to pay (WTP) method, which relies on estimates of how much societies are willing to pay for additional health or the prevention of illness and disability, measured by healthy life years (QALYs)4 or disability-adjusted life years (DALYs).5 2.1. The high burden of unsafe care continues, but severity and preventability vary across specialties and settings Studies in the 1980s and 90s suggested that around 1 in 10 patients are harmed during health care, and that approximately half of the safety lapses that result in harm were preventable. Recent evidence appears to confirm these findings. However, a more nuanced understanding is emerging of differences in severity and preventability between specialties and settings. Low-to-middle income countries continue to experience most of the human cost of patient harm The human cost of patient harm is the most important concern. Patients in all parts of the world continue to die as a result of unsafe care. The burden is felt most in low-to-middle income countries (LMICs) where it is estimated that safety lapses result in 134 million adverse events, causing 2.6 million deaths each year. This suggests that in LMICs approximately 1 in 4 hospitalisations result in harm and that 1 in 24 people die from unsafe hospital care.6 Improving safety must therefore be a critical aspect of achieving the goal of universal health care. The figure of 2.6 million deaths is, in fact, likely to underestimate the true extent of the problem as it is based only on six types of hospital-based harm. 7 The actual number is likely to exceed 3 million deaths per annum (Jha 2018; National Academies of Sciences Engineering and Medicine 2018). A considerable percentage of these deaths can be prevented with (financially) inexpensive interventions such as hand hygiene (see Section 3). In developed countries the problem

is also considerable. It is estimated that in the United Kingdom, Canada, and the Netherlands around 5% of hospital deaths are due to preventable safety lapses (Hogan et al. 2015). This translates to about 11,000 lives per year in England (NHS 2019). The figure of 98 000 deaths per annum from the seminal IOM report in the United States (Institute of Medicine 2001) was subsequently re-estimated to be around double that figure (Andel et al. 3 The latter is better seen as an opportunity cost (the benefits of alternative allocation of these resources) as they technically do not result in money taken out of the economy, rather result in its redistribution. More detail is provided in section 2.4. 4 QALY – Quality adjusted life year. The equivalent of a year live in full health, typically measured by a health-related quality-of-life instrument such as the EQ-5D questionnaire. 5 DALY – Disability adjusted life year - can be thought of as one lost year of "healthy" life. The sum of DALYs across a population represent the burden of attributed to a disease or risk factor in question. 6 Based on 2018 population numbers, the figure would be 1 in 22. 7 ADEs, CAUTI, VTE, pressure ulcers, falls, ventilator-associated pneumonia | 15 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 2012). Results recently published by the AHRQ suggest that more than 20 000 deaths have been avoided between 2014 and 2017 through improvements in safety for hospital patients in that country (AHRQ 2019). While these numbers are very encouraging, they also suggest that the number of deaths from unsafe care in patients over 65 stands at around 130 000 per year. For context, at the time of finalising this report (September 2020), the number of deaths recorded due to covid-19 in the United States was approaching 200 000. The United Kingdom had recorded over 41 000 deaths. The global count stood at over 950 000. Over 1 in 10 patients continue to be harmed during care A 2019 systematic review and meta-analysis of the prevalence, severity and nature of patient harm drawing on 70 studies across all healthcare settings8 found a 12% pooled prevalence of harm, with 9% to 15% of safety lapses resulting in severe morbidity or death. In aggregate, approximately 50% of lapses were considered preventable. However, harm was more prevalent, more preventable and more severe in the more specialised settings of intensive care and surgery (Panagioti et al. 2019). Preventability continues to be a fluid concept. Technological advances and innovations in health care have the potential to reduce harm previously considered unavoidable. For example, a baseline rate of catheter-associated bloodstream infections (CLABSI) was previously considered an acceptable part of hospital care. However, the development and implementation of prevention protocols (and cultural change among providers) proved that most if not all CLABSI could be avoided (Pronovost et al. 2006). The paradigm shift has meant that near-zero CLABSI rates are now the accepted benchmark. Digital technology can also radically change our understanding of preventability. Interoperable electronic health records (where information follows the patient wherever they seek care) can reduce safety lapses such as adverse drug reactions, limiting them only to cases where a patient has never been exposed to the medication in question (see Section 3). Delayed or wrong diagnosis is a main contributor to patient harm in the community setting. For example, every adult in the United States is liable to experience such

as lapse in safety at least once in their lifetime. Electronic health records and other digital technology can contribute to reducing these (while ensuring overdiagnosis is not an unintended consequence). As a result, some consider up to 80% of this type of harm to be preventable (Auraaen, Klazinga, and Slawomirski 2018). Overall, the preventability needs a more nuanced approach to enable more accurate analysis of the impact of harm. The uneven distribution of preventability and severity of harm across settings, and specialties within them, also influences the way costs are estimated. In surgical and intensive care harm tends to be more severe than in other acute care types, with a higher proportion of it deemed preventable (Panagioti et al. 2019). Surgical and intensive care admissions are also more expensive and account for a sizable part of hospital activity. The disproportionate harm and lower preventability should be reflected in estimates of additional direct cost of harm. A blanket 50% adjustment of aggregate costs in the acute sector may in fact underestimate the true financial and economic impact of unsafe care (see Section 2.3). 8 But predominantly focused on hospital care: emergency, medical, surgical, intensive care and obstetrics. 16 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 2.2 The global burden of unsafe care remains significant and can be compared to that of HIV/AIDS Recent evidence confirms that certain types of harm account for the greatest health and financial costs. Anand, Kranker, and Chen (2019) estimated the costs of unsafe hospital care in the United States using inpatient data that capture 90% of discharges in 12 states. Focusing on 9 common adverse event types,9 they calculated the cost of additional hospital treatment during admission as well as any subsequent admissions within 90 days.10 In aggregate, the 9 events generated an additional cost of USD 2.8 billion per year across the 12 states. The costliest lapses in aggregate were hospital-acquired urinary-tract infections (HAUTI) accounting for over USD 2 billion or 70% of the additional costs exerted by all 9 events, followed by VTE, accounting for USD 471 million, or 16% of the total cost. This was principally a function of the comparatively high incidence of these two events, as the additional length of stay and other costs they exerted were modest. These findings highlight that reducing aggregate cost of harm needs to focus on the ‘mundane’ but common lapses. Duckett and Jorm (2018) found that the aggregate cost of hospital complications including adverse events such as HAI and ADEs account for 13% of public hospital spending in Australia. Rates varied significantly between hospitals even when patient complexity (casemix) is accounted for. The authors estimated that if all hospitals in the sample reduced their complication rate to that of the 10th percentile, 250,000 patients could avoid harm per year. This would free up beds and resources worth AUD 1.5 billion and allow approximately another 300,000 patients to be treated each year. Medication errors and consequent adverse drug events (ADEs) continue to be frequent and costly. A 2020 study estimates that over 237 million medication errors occur in England each year, with 66 million (27.8%) resulting in moderate or severe harm. Over 5% of all hospitalisations are the result of primary care ADEs. The annual cost of treating ADEs deemed ‘definitely and probably avoidable’ across all healthcare sectors in England is GBP 840 million (approx. USD 924 million) or 0.7% of healthcare expenditure (Elliott et al. 2020). 11 The disease

burden and its impact on quality of life are considerable Research is shifting towards measuring patient harm in terms of its impact on health-related quality-of-life (QoL). Jha et al. (2013) estimated that seven types of hospital-acquired harm12 accounted about 23 million DALYs per annum globally, with over two thirds (15.4 million DALYs) felt in LMICs. The global burden of disease stemming from all types of harm was recently estimated at 64 million DALYs (Figure 1) putting the burden of unsafe care in the same league as traffic injuries or major infectious diseases (Jha 2018). 9 HAUTI, CLABSI, falls, SSI, VTE, pressure ulcer, birth trauma and obstetric trauma (with and without instrument) 10 The costs as a proportion of hospital or total healthcare expenditure were not provided. 11 The authors estimate that 99 million medication errors occur in long-term care medication but these were not included in the cost estimates due to absence of robust data. The true figure is therefore likely to be higher. 12 ADEs , CAUTI, CLABSI, Falls, pneumonia, pressure ulcer, VTE | 17 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Figure 1. The annual global disease burden of unsafe care is similar to road injuries and HIV/AIDS (DALYs, millions per annum) Source: Jha (2018) Recent research has focused healthcare-associated infections (HAI). Cassini et al. (2016) found that six HAI types13 occur 2.6 million times in European Union (EU) countries each year. This generates an annual disease burden of 2.5 million DALYs. The authors estimate that the cumulative (lifetime) disease burden of one year’s HAIs is 501 DALYs per 100 000 population, which aggregates to 2.23 million DALYs based on the current EU population. Applying a 3.5% discount rate deflates this lifetime burden to just over 1.3 million DALYs. More recently, the annual health burden of five types of HAI14 was estimated to be 1.47 million DALYs across the EU. This exceeds the combined burden of 31 infectious diseases in Europe including influenza, tuberculosis and HIV/AIDS. The highest aggregate burden was also exerted by pneumonia, blood stream infections and urinary tract infections (Zacher et al. 2019). Antimicrobial-resistant HAI generate a disproportionate burden. Cassini et al. (2019) studied the burden of all resistant infections across Europe. They found that 426 277 a year (or 63.5%) of the resistant infections were healthcare-associated and that this subset was responsible for 72% of deaths, and 75% of DALYs of all infections, amounting to a total of 645 000 DALYs a year based on the 2015 EU population. This is roughly equivalent to the combined burden of influenza and tuberculosis in the relevant countries (Cassini et al. 2018). Interest is growing in the effects of adverse events on patients’ subsequent quality of life (QoL). Researchers from Imperial College London are examining the effect of nine safety lapses during 13 pneumonia, surgical site infection, blood stream infection, urinary tract infection, clostridium difficile infections, neonatal sepsis 14 pneumonia, surgical site infection, blood stream infection, urinary tract infection, clostridium difficile infections 67 67 64 56 40 0 10 20 30 40 50 60 70 Road injuries HIV/AIDS Patient harm Malaria Tuberculosis DALYs (Millions) 18 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 joint replacement surgery on patient-reported QoL.15 Provisional analysis suggests that patients who experience one or more safety lapses during their admission report, on average, 0.07 lower

improvement on the EQ-5D index compared to the average. This suggests that that the cost of these lapses to patients is a 15-20% reduction in QoL (Kristensen 2020). 16 Extended over the remaining lifespan of typical joint replacement patients, the incremental cost of these safety lapses is 1.4 QALYs each.17 Sepsis needs to be prevented and better managed when it does occur Sepsis, the body's inflammatory response to infection, is among the most common causes of inhospital death and most expensive conditions to treat (Liu et al. 2014; Torio and Moore 2006). Healthcare-associated infections (and other types of harm) can result in sepsis during acute care. But sepsis can also manifest after discharge. While the management of sepsis has improved over the past two decades resulting in lower mortality, it remains a major public health concern. In addition, sepsis can be under-diagnosed and accurate data on its incidence, disease burden and costs have not been easy to obtain. In the United States, the total cost of treating sepsis exceeds USD 60 billion each year. Approximately 60% of patients treated for septic shock die within 6 months, and hospital-acquired sepsis is associated with a greater mortality risk (Buchman et al. 2020). Globally, it is estimated that 49 million cases of sepsis and 11 million sepsis-related deaths occur each year. The latter represents about 20% of all deaths, with the highest burden experienced by LMICs. However, incidence and mortality rates have fallen by 37% and 53% respectively since 1990 (Rudd et al. 2020). Rudd et al (2020) did not identify what proportion of cases stem from iatrogenic causes. Previous research in the United States has, however, estimated that as much as 37% of sepsis cases are associated with health care (Page, Donnelly, and Wang 2015) and that 1 in 4 surgical site infections are said to develop into sepsis (Haque et al. 2018). This suggests that, globally, over 3 million sepsis-related deaths may originate from unsafe care each year.18 Results of the studies discussed in this and the previous section are summarised in Table 1. Table 1. Summary of listed studies on the burden and cost of patient harm Study Region Type of harm Measures Results Anand et al (2019) United States (12 states) In-hospital harm (9 types) Direct costs USD 2.8 billion across the 12 states; CAUTI and VTE most costly in aggregate 15 1 Retained Surgical Item or Unretrieved Device Fragment; 2 Central venous catheter-related blood stream infection; 3 Postoperative hip fracture; 4 Perioperative Hemorrhage or Hematoma; 5 Postoperative Acute Kidney Injury Requiring Dialysis; 6 Postoperative respiratory failure; 7 Perioperative VTE; 8 Postoperative Sepsis; 9 Unrecognized Abdominopelvic Accidental Puncture/Laceration. 16 EQ-5D index using the United Kingdom valuation. 17 Assuming an additional 20 life years, and constant QoL difference over that time (financial equivalent of this cost is provided in Section 2.4). 18 The 37% figure was derived from a United States sample. It is possible but unlikely that the proportion is lower in other parts of the world. | 19 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Cassini et al (2016) European Union 6 HAI types DALYs 2.5M DALYs p.a. Cassini et al (2018) European Union HAI by resistant organisms DALYs 645K DALYs p.a. Duckett & Jorm (2018) Australia In-hospital complications Direct costs 13% of hospital expenditure Elliott et al (2020) England Medication error / Adverse Drug Events Prevalence Direct costs 237 million errors p.a. 66 million ADEs GBP 840 million p.a. Jha et al (2013) Global In-hospital harm (7 types) DALYs 22.6M DALYs p.a. (68% in

LMICs) Jha (2018) Global All harm DALYs 64M DALYs p.a. National Academies (2018) LMICs In-hospital harm (6 types) AEs and deaths 134 000 AEs 2.6M deaths Rudd et al (2020) Global Sepsis (all causes) Mortality 11 M deaths globally p.a. 3-4M due to unsafe care19 Kristensen (2020) England 9 types of harm during hip/knee arthroplasty QALYs Harmed patients report 15-20% less improvement in QoL = 1.4QALYs Zacher (2019) European Union 5 HAI types DALYs 1.47M DALYs p.a. 2.3 Over 12% of national health expenditure is consumed by managing the harm of unsafe care The previous OECD reports exploring the economics of patient safety provided cost estimates for specific settings: acute/inpatient, primary/community/ambulatory and long-term care (LTC). In acute care, the most harmful safety lapses were infections, VTE, adverse drug events, falls and pressure ulcers. The main sequelae were premature death and additional morbidity requiring prolonged admission, re-admission, and/or additional non-acute care. The headline finding was that, in a typical OECD country, approximately 15% of inpatient expenditure was consumed by treating the effects of hospital-acquired harm (Slawomirski, Auraaen, and Klazinga 2017). The 15% figure includes the additional care during the admission in which the safety lapse occurred. It excludes some unknown costs, such as:20 (1) additional follow-up care required in the non-acute setting; (2) consequent hospital re-admissions, and (3) cases where the adverse event resulted in a new principal diagnosis and therefore 'new' admission (e.g. an inpatient fall resulting in a fracture). In the community setting (primary / ambulatory care), the majority of patient harm stems from adverse drug events, and wrong or delayed diagnosis and treatment. Harmed patients typically experience temporary morbidity requiring additional care or, in some cases, admission to hospital. 19 Estimate of 30-35% based on literature 20 These should be termed the 'known' unknown direct costs, as there may be other direct costs of harm that have not been conceived. 20 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Previous modelling suggested that about 4% of inpatient expenditure could be attributed to unnecessary admissions for 5 conditions21 that can be managed in the community setting. The literature suggests that adverse drug events may account for as much as 4% of inpatient capacity and 3.6% of hospital admissions (Auraaen, Klazinga, and Slawomirski 2018). The unknown direct costs of unsafe care the community setting include admissions resulting from safety lapses in addition to the five conditions examined previously, and the costs of additional non-acute care. In this setting, a considerable proportion of harm (up to 80%) can be prevented with existing knowledge and technology (Auraaen, Klazinga, and Slawomirski 2018). In LTC, the most common adverse events include pressure ulcers, falls, adverse drug events, malnutrition and infection. These can sometimes result in death (as seen with covid-19 infections), but typically cause additional morbidity requiring extra care at the facility or a hospital admission. Admissions to hospital from LTC account for about 6.25% of inpatient expenditure in OECD countries, with 40% of these considered preventable. The cost of pressure ulcers is estimated at between 2 and 4% of total health expenditure (de Bienassis, Llena-Nozal, and Klazinga 2020). The effects of malnutrition and the costs of harm borne at facility-level are not known, but these are likely

to be modest compared to the costs of admissions. The previous three OECD reports used various denominators in estimating the direct costs of harm. Here, results have been re-calculated using a common denominator of all annual spending on health as reported to the OECD statistics database. The direct cost of unsafe care in health systems of developed countries is estimated at 12.6% of health expenditure, comprising 5.4% in acute care, 3.3% in primary care and 3.9% in LTC (Figure 2 and Appendix 1). This amounts to approximately USD 878 Billion (2018 PPP) across OECD member countries each year, or about 1.4% of their combined GDP.22,23Excluding unknown harm reduces this to 10.5% of health expenditure (USD 732 Billion or 1.2% GDP). Factoring in preventability reduces the direct cost to 8.7% of total health expenditure.24 In other words, OECD countries spend about USD 606 Billion a year to treat patients harmed by avoidable safety lapses. This amounts to just over 1% of their combined economic output. It exceeds the annual health expenditure of Japan, and the entire GDP of Belgium. More importantly, it represents a considerable opportunity cost, as scarce resources are diverted from other important areas of health and social spending to manage a preventable problem. 21 Heart failure, diabetes, asthma, COPD and hypertension. 22 Health spending figures derived from http://www.oecd.org/els/health-systems/health-data.htm 23 GDP figures are for 2018. Source: https://data.oecd.org/gdp/gross-domestic-product-gdp.htm 24 Further detail, including explanation, assumptions and calculations, provided in Appendix 1. | 21 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Figure 2. Treating the effects of unsafe care occupies a sizable proportion of health spending in OECD countries Source: Slawomirski et al (2017); Auraaen et al (2018); de Bienassis et al (2020) 2.4 The indirect costs of harm amount to trillions of US dollars each year Unsafe care exerts considerable unnecessary financial burden on health systems. It also incurs downstream economic and social costs. Just as any disease exerting a health burden (diabetes or cardiovascular disease, for example) patient harm lowers economic output and growth as well as social welfare. The two dominant methods to measure these indirect costs are willingness to pay (WTP) and the human capital approach (Jo 2014). While the following sub-sections provide estimates, further research is required (Box 2). Box 2. The social and economic cost of harm needs targeted research A clear gap exists in estimating the impact of unsafe care on economic output, growth and social welfare. Cost of illness studies of patient harm have not been conducted. Using WTP and cost of illness studies from other diseases and conditions, as is done in this report, provides approximations only. A potential way to fill this gap would likely involve microsimulation modelling, drawing on retrospective clinical as well as economic, financial and census data. An econometric approach would compare two cohorts – one with and the other without iatrogenic harm - matched for other variables. This can be done prospectively or retrospectively, with the former more resource- and time-consuming. Both would require linking clinical, administrative and fiscal data. Another potential area of research is to elicit social preferences around the willingness to pay (WTP) to avoid harm and compare these to other health interventions. acute care harmprimary care harm LTC harm all other spending 22 | THE

ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 The social cost of unsafe care is considerable, as is the willingness to invest in preventing certain types of harm The WTP method examines the costs of a condition based on what societies would be willing to pay to ameliorate or avoid it. The approach is based on the amounts that a country or population typically pays for interventions with a known utility (i.e. its impact on health-related QoL). This cost-utility ratio25 is really a measure of opportunity cost of health interventions – how much a society is willing to forego in order to generate a certain health benefit in an individual or population (Auraaen et al. 2016). Health systems explicitly or implicitly reveal their WTP for an additional or incremental QALY by how much they pay for various treatments, pharmaceuticals, and medical procedures. Yet the cost-utility ratio used in health technology assessment varies between, and even within, countries depending factors such as the target disease, patient type and ability to pay (typically a function of GDP per capita). For example, authorities in the United Kingdom apply a threshold of GBP 20 000 to 30 000 per QALY (USD 25 000 – 36 000) to decide whether a medical intervention should be provided by the National Health Service. However, the threshold can vary depending on the target disease, with more recent guidelines permitting up to GBP 50 000 (USD 62 000) in some cases (Paulden 2017). In the United States a cost-utility threshold is not set explicitly, but has been calculated to range from USD 50 000 to USD 150 000 depending on location, payer and patient type (Smith 2019). Korea and the Slovak Republic apply a floating cost-utility threshold set at their GDP per capita, while Hungary and Poland set theirs at 3 times GDP per capita (Auraaen et al. 2016). In developing countries the threshold is estimated to be 50% of GDP per capita or lower (Woods et al. 2016). If the extent to which patient harm increases patients' disability – or reduces their health-related QoL -- is known, a monetary value can be placed this based on what society would be willing to pay to prevent it. Andel et al. (2012) applied this method to estimate that the indirect cost of harm in the United States approaches USD 1 trillion per annum. Section 2.2 described preliminary research from Imperial College London suggesting that patients who experience safety lapses during joint replacement surgery report QoL up to 20% lower compared to the average patient. This difference amounts to 1.4 QALYs over the patient's remaining lifespan. If a mere 1% of joint replacement patients in the United Kingdom experienced one of the harms investigated, each year's procedures would generate a loss of over 30 000 QALYs.26 Using a WTP of USD 25 000 per QALY means that a 1% harm rate in these procedures would create an incremental cost of USD 770 million per year (at the current number of annual procedures). Discounting at 3% reduces this to USD 585 million. The WHO has been careful not to prescribe a cost-utility threshold, as this should ideally be based on the local context, preferences and priorities. However, it specifies that interventions with a cost-utility of less than the GDP/capita to be 'very cost-effective' and those with between 1- and 25 In health technology assessment this is typically called the incremental cost-effectiveness ratio (ICER) 26 Based on 2.2 million primary hip, and primary knee, replacements performed in the United Kingdom each year (NJR 2019). | 23 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO

ACTION © OECD 2020 3-times GDP/capita as ‘cost-effective’. Ratios above this are not considered cost-effective (Auraaen et al. 2015). Using a WTP of 2-times GDP per capita may provide a way to estimate the ‘social cost’ of harm more generally. One could presume that societies might be willing to pay to prevent harm based on how much they pay for interventions that ameliorate other causes of morbidity and mortality. Applying this to the findings of Cassini et al. (2016) suggests that the social cost of the six types of healthcare-acquired infections in EU countries amounts to USD 230 Billion a year. 27 The five healthcare-acquired infections analysed by Zacher et al (2019) incur a cost of USD 135 Billion a year in EU countries. 28 Globally, the annual social cost of harm would near USD 1.4 Trillion based on the findings of Jha (2018) using the 2-times global GDP per capita metric.29 The annual social cost in high-income countries would be valued at USD 1.9 Trillion,30 just over 2% of current annual gross world product (GWP) – a measure of global economic output. These figures must be interpreted with caution as they do not consider preventability of harm and are based on WTP for medical interventions to treat morbidity and mortality, not prevent them. Societies and populations may place a lower or higher value on avoiding patient harm. In fact, some evidence suggests that avoiding certain types of iatrogenic harm attracts a much larger amount of resources per QALY/DALY than what is typically spent on medical interventions. For example, the marginal cost of some screening tests of donated blood to reduce the risk of HIV and hepatitis B and C transmission during transfusion exceeds USD 50 million per QALY in some jurisdictions (Borkent-Raven et al. 2012; Janssen et al. 2017; Marshall et al. 2004; Moatti, Loubière, and Rotily 2000). This means that, implicitly at least, societies place a very high value on preventing these adverse events. Clearly the cost of unsafe care based on societies’ WTP to avoid patient harm is considerable. It can be a useful way to present not only the size of the problem but also inform resource allocation decisions more explicitly. To advance this area, more research is needed on the QoL impact of unsafe care as well as societal preferences regarding the WTP to prevent patient harm. Patient harm may reduce economic output by trillions each year The human capital approach using cost-of-illness seeks to model the effect of morbidity and mortality on economic output. The main variable of interest would ideally be the change in 27 This assumes an interchangeability of the DALY and QALY, which should be used with caution. When an intervention is aimed at preventing or treating a non-fatal disease, the relationship between QALYs gained and DALYs saved depends on age of onset and duration of the disease, as well as the quality of life / disability weights, while in case of a fatal disease, a larger number of factors may determine differences between outcomes assessed with the two metrics (Sassi 2006). 28 Using an EU GDP per capita 2019 of USD 46 000 (Source: https://data.oecd.org/gdp/gross-domestic-productgdp.htm e) 29 2019 World GDP and population. Sources: http://statisticstimes.com/economy/gross-world-product.php and https://worldpopulationreview.com/ 30 HICs as defined by the World Bank; based on the 2018 GDP per capita of OECD countries: USD 46 173. Source: https://data.oecd.org/gdp/gross-domestic-product-gdp.htme 24 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 economic productivity of the patient and their informal carers,

who will need to reallocate some of their time and effort to caring for the harmed patient.31 Lower taxation revenue and higher welfare payments are also calculated. However, only the effects on patients (not on their informal carers) are typically included in this approach. This method is also biased towards people of working age, neglecting the fact that retired people are also economically active. Such activity is likely to be affected by prolonged morbidity due healthcare harm, more resources will be consumed in other areas and industries (health and social care).32 Studies have applied variations of the human capital approach to specific types of harm. Gyllensten et al. (2014) estimated the total social costs of adverse drug events (ADEs) in primary care using a random population sample in Sweden. That country's comprehensive system of clinical, cost and social insurance registries allowed both the direct and indirect costs such as sick leave and disability pensions to be calculated. The indirect costs (based only on productivity loss from sick leave and from income support/disability pension) were USD 3 405 per patient with at least one ADE, over double that of patients without ADE (who are also unwell and therefore experience a loss of productivity). The total marginal economic cost for people with ADEs in the sample was USD 3 794. Applying this figure across the entire population amounts to 0.75% of Sweden's GDP.33 Estimating the indirect cost of safety lapses can also be attempted by combining what is known about the disease burden of patient harm with cost of illness studies for other diseases. For example, Schofield et al. (2016) modelled the combined costs of productive life years lost (PLYLs) lost, welfare payments and lost tax revenue due to chronic diseases among Australians aged 45- 64 years at 1.6% GDP in 2015. Such results may provide clues about downstream productivity losses caused by patient harm. Bommer et al. (2017) estimated that the global economic cost of adult diabetes in 2015 was USD 1.31 Trillion or 1.8% of gross world product (GWP). Based on the human capital approach about 35% (USD 458 billion, or 0.63% of GWP) of these costs were indirect.34 Diabetes accounts for approximately 57 million DALYs in 2015 (Hay et al. 2017), whereas the annual global burden of adverse events is estimated at 64 million DALYs (Jha 2018). Assuming a similar disease impact profile, patient harm may reduce on global economic output by as much as 0.71% each year.35 31 This comprises absence from work and 'presenteeism, where a worker is present but less productive due to their condition or disease. 32 This creates a circularity problem, where direct costs of harm also contribute to broader economic activity. Disentangling the net effect of this would require modelling beyond the scope of this report. 33 This figure does not account for preventability of harm. 34 The authors define indirect costs as "the economic burden caused by production losses due to premature mortality and morbidity (absenteeism, presenteeism, and labour-force dropout)". 35 The mortality and morbidity profile of diabetes would differ to that of healthcare harm, but there are also some parallels. Both have a truly global impact -- perhaps more so than other diseases of similar aggregate burden such as malaria, tuberculosis and HIV/AIDS, which disproportionately affect poorer. In addition, the risk and effects of both are greater in older adults. See Appendix 2 for more detail. | 25 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION ©

OECD 2020 The potential cumulative effect on GWP growth of eliminating harm between 2015 and 2024 (based on IMF data and projections) is illustrated in Figure 3. Following a dip due to the covid-19 pandemic, GWP is expected to be about USD 101 trillion by 2024, up from USD 75 trillion in 2015. Eliminating harm in the timeframe examined would result in: • 4.25% average annual growth (compared to 3.51%) • a GWP over 6% greater than expected in 2024 (USD 108 trillion versus 101 trillion) • an accumulated GWP gain of more than USD 29 trillion (36% of current GWP). These figures should, of course, be interpreted with caution for several reasons (see Appendix 2). However, it should be clear that unsafe care exerts a considerable global economic burden and a brake on inclusive growth. Figure 3. GWP actual and projected with patient harm eliminated, 2015 – 2024 (USD billions, current prices) Notes: ^based on IMF World Economic outlook (June 2020) *annual growth based on pre-covid IMF projections; Y-axis starts at USD 70 trillion Source data: IMF https://www.imf.org/en/Publications/WEO The complex problem of harm needs innovative solutions and investment Considerable advances in medical technology have been made over the past 4 decades. Yet patients continue to be harmed at an unacceptable rate all over the world. One possible explanation is that the growing complexity itself of health care inflates risk. Reason (2016) warned that even the most advanced medical interventions are relatively simple compared to keeping people safe when executing them. To paraphrase Lewis Carrol, managing clinical risk needs to improve just to stay in the same place with regard to keeping patients safe in an evermore complex system. 70,000 75,000 80,000 85,000 90,000 95,000 100,000 105,000 110,000 2015 2016 2017 2018 2019 2020^ 2021^ 2022* 2023* 2024* USD (Billions) GWP: actual/projected GWP: harm eliminated 26 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 What can governments and policy makers do? First, they must see patient harm as a major public health and economic problem. Second, action and investment are needed to outpace the growing complexity of care, reduce the incidence of harm for all patients in all settings. The responses to the covid-19 pandemic and foreseen consequences for the world economy may prove to be fertile ground to re-emphasize focus on patient safety as an integral part of health system strengthening. Any state that wishes to protect its people from harm and promote inclusive growth is compelled to invest in reducing unsafe care, but to do so as efficiently as possible in the context of competing options and limited resources. This is the focus of the next section. | 27 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 3. Investing in patient safety offers good returns It is expected that by 2030 health expenditure in OECD countries will, on average, account for 11.3% of GDP, up from 8.8% in 2018. The main drivers of this increase are income growth (ability to pay), the low relative productivity and efficiency in health systems, and increasing complexity of medical care and technology (OECD 2019b). Governments can constrain this growth by increasing revenues, re-allocating resources from other areas of spending, raising private financing of health care, or finding efficiency gains in health systems. Reducing unsafe care and improving safety presents an opportunity to prosecute the latter in managing expenditure growth. However, implementing and maintaining

efforts to improve safety is not free. It also requires resources that need to be diverted from other uses. Figures presented in Section 2.4 suggest that societies may be willing to pay considerable amounts to avoid certain serious adverse events. But this willingness to pay is not determined explicitly and is unlikely to apply to all adverse events. In the context of tightening health budgets and many competing funding demands, it is safe to assume that policy makers do not have carte blanche to begin funding all safety interventions in any manner they see fit. A useful way to approach this question is the concept of value for money. In its broadest conception, value is the ratio of the desired outcomes and cost of achieving them (Value = Outcome ÷ Cost). In the context of patient safety, the numerator (outcome) comprises (a) the extent of harm prevented or avoided and (b) the resources and other costs saved by preventing harm. The denominator comprises the costs of making care safer. In a resource-constrained world, the question is which safety interventions, deployed either alone or in combination with one another, offer the best outcome at least cost? The main economic question is whether the benefits of investing in safer care outweigh those generated where the resources are taken from. This is the key for policy makers balancing prevention costs with the costs of safety failure. The challenge is to present the business case that safety strategies have a greater pay-off than alternatives. Two important economic concepts increase the challenge for decision makers, especially at system level. First, to ensure optimal allocation of resources across all options in the health system (allocative efficiency) it is important to consider the incremental effects of investment (at the economic margin), as this will change depending on the amount that has already been invested. In any efforts aimed at reducing risk, the (opportunity) cost of preventing each additional quantum of harm will increase with the level of caution. Conversely, the marginal cost of safety lapses will diminish (Figure 4). From a perspective of efficiency, investing in prevention is optimal up to the point where its marginal cost equals the marginal cost of harm. The optimal level is therefore at ai, beyond which additional investment is likely to create more benefit elsewhere – the opportunity costs rise as one moves to the right of the curve. For example, Begley (1995) analysed the cost-benefit of pharmacist visits to patients in their homes, finding that the net benefit of the fifth visit was 177 28 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 times less than that of the first visit. Sensible policy would limit visits and re-allocate the resources saved to another programme. Figure 4. The cost of prevention increases and cost of harm avoided reduces at the economic margin Source: Adapted from Zsifkovits (2016) In some health systems, the marginal cost of certain medical interventions may indeed be at a point where re-allocation to other ends makes economic sense. For example, certain elective procedures appear to add little incremental benefit compared to their costs (Ferket et al. 2017).. Diverting any additional resources from these and other 'low-value' activities to make fiscal space for initiatives that reduce patient harm makes good economic sense. Given the level of variation and inappropriate care (Buchan et al. 2016; Chew et al. 2016; OECD 2014) and the hitherto nascent status of patient safety as an investment target, this is a likely scenario It is important to

acknowledge the inevitable trade-offs involved in making allocation decisions. For example, a tension exists between efficient versus equitable distribution of benefits (harm reduction) because the cost/benefit function will differ between, for example, geographic regions, patient types and healthcare settings. If equity is a policy objective, value judgements are needed to resolve this tension. This requires a more comprehensive conception of value, with more than simply health gain comprising the numerator of the value function.36 An intervention to reduce harm in a vulnerable patient population (e.g. in a remote location, for example) will be more costly. An equity consideration will move the curve to a new position in Figure 4, creating a new intersection point aii meaning that more investment is needed to achieve policy objectives. 36 If minimizing the aggregate health burden of unsafe care is the goal, the entire safety budget could potentially be invested in reducing HAI and VTE in surgical patients, at the expense of other specialties and settings. However, while potentially efficient, such allocation would not be palatable from an equity standpoint. | 29 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Figure 4 also illustrates the rising cost/benefit of eradicating all harm and the need for policy makers to think in terms of an appropriate balance between the cost of prevention with the cost of harm. Health care is a complex, high-risk endeavour. Things will not go to plan 100% of the time. While health systems can certainly do better than the current 90% success rate, preventing every adverse event would effectively require shutting down health care altogether. This would incur a huge opportunity cost to health and the broader economy – adding up to much more than the cost of patient harm. A useful analogy is civil aviation, another high-risk industry. Statistically, flying is extremely safe, but accidents are inevitable over time. The only way to prevent them altogether would be to ground all aircraft. But this would also forego all the benefits of air travel, which is obviously too high a price for eliminating all risk. A challenge is the lack of robust evidence for value and return on investment to guide decisions. High quality, full economic evaluations of safety interventions are rare, with many failing to include the cost of the interventions (Carter et al. 2020 forthcoming). Most are effectively ‘benefit’ evaluations only. Another challenge is that results are expressed in a range of ways: savings-tocost, cost-utility per QALY gained, cost per DALY avoided, and cost per adverse event prevented. This makes it difficult to directly compare the ROI of interventions across studies. Research is strongly skewed towards specific interventions, typically targeting one type of harm in a single setting. For example, an economic evaluation of decontaminating the digestive tract prior to elective gastrointestinal surgery - a highly specific, niche intervention – found a 92.1% probability of being cost-effective (Dijksman et al. 2013). But in fact, the most savings and perhaps value may be in cross cutting, generic interventions. Zsifkovits et al. (2016) estimated savings of EUR 300 million for a programme to reduce healthcare-associated infections, about EUR 2 billion for a programme to reduce pressure ulcers and about EUR 6 billion for implementing an electronic medication ordering system across EU member states. A recent systematic review by Carter et al (2020 forthcoming) found that approximately half of the literature identified addresses 3 patient safety outcomes: healthcare-associated infections, VTE

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and adverse drug events. The authors found only 17 high-quality randomised trials and economic evaluations. Twelve of these evaluated interventions aimed at preventing VTE, with most of these funded by industry. The focus on specific interventions is unsurprising, given the methodological difficulties of gauging the effects of broad and cross-cutting interventions with research methods typically used to generate evidence for the efficacy and effectiveness of medical interventions. It is difficult to assess the impact of complex, multimodal interventions with powerful socio-technical determinants of success. As such, little evidence exists on such strategies as well as on the effectiveness of combining various interventions that cut across the levels of the health system. This section attempts to provide evidence and information on where the best value and returns on investing in safety may be using a system perspective. Interventions are presented based on their level of implementation: 1. clinical, 2. organisational and 3. systemic. Despite the limitations of the evidence, a picture emerges. Safety should be at the heart of a value-based approach to health care. Some specific interventions targeting healthcare-associated infections, VTE and other types of events deliver a particularly high return. Evidence is also emerging for applying digital technologies and that improving information transfer can be very effective. 30 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 However, moving from analysis to action will require deeper behavioural change across entire health systems. This cannot be achieved with a piecemeal approach of deploying individual interventions and technologies. An overarching institutional and policy framework is needed as a vehicle to generate more benefit per dollar invested in safety. Such a framework includes governance, information and measurement as well as a consideration of the behavioural incentives, including financing and remuneration, that are embedded in all health systems. 3.1 Targeting specific types of harm at clinical level is a worthwhile investment Previous reports on the Economics of patient safety identified patient safety interventions that can be considered to take place at the clinical level.37 Strategies targeting the most common adverse events (VTE, HAI, ADEs, surgical safety, pressure ulcers, falls and diagnostic errors) were ascribed the highest benefit to cost ratios. In this sub-section, recent evidence on the effectiveness and potential return on investment of clinical-level interventions is outlined. Tackling healthcare-associated infections can deliver excellent returns Based on the available evidence, interventions aimed at preventing healthcare-associated infections (HAI) stand out as having the potential to deliver exceptional value in all countries. A systematic review of interventions targeting HAI found a median saving-to-cost ratio of 7:1 (a 7- fold ROI) across the 18 papers that met the inclusion criteria and reported both the costs and effects of the intervention (Arefian et al. 2016). 38 This accords with a prior study that focused on interventions targeting hospital-acquired MRSA infections and found a median savings-to-costs ratio of just over 7:1 (Farbman et al. 2013). Arefian et al. (2016) also reported that the most common costs of implementing HAI interventions were practitioner time, antimicrobial and other pharmaceutical use, and administrative time. The reported ROI tended to be lower in multi-centre studies compared to single faculties

perhaps due to higher implementation costs of changing behaviour across larger, disparate organisations. Higher ROIs were reported in studies of aimed at several types of HAI compared to preventing a specific type. Interventions in the surgical setting had higher ROI than other specialties. Targeting HAI appears bear economic fruit irrespective of context or baseline levels. A systematic review and meta-analysis found that multifaceted interventions can deliver significant reduction in HAI rates irrespective of a country's income per capita (Schreiber et al. 2018). Nuckols et al. (2016) reviewed the evidence for interventions to prevent bloodstream infections from central venous catheters (CLABSI) -- a frequent cause of hospital-acquired sepsis. The systematic review covered 113 hospitals found that the average impact was associated with 57% fewer infections and incremental net savings of USD 1.85 million per hospital over 3 years. Moreover, each additional dollar invested generated a 3-fold return suggesting that larger initial investments may be associated with greater savings. Infections and costs declined even at hospitals already using checklists and/or with low baseline infection rates. Most interventions adopted protocols recommend by AHRQ, the United States' Agency for Healthcare Research and Quality (Nuckols et al. 2016). 37 Meaning they can theoretically be implemented at clinical or ward level without broader organisational or system involvement that would be required to implement, say, an electronic medical record. 38 The average ROI was 11:1 but this figure was skewed by high ratios in two of the studies examined. | 31 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Overall, the evidence suggests that HAI reduction strategies across the relevant parts of a health system deliver an ROI of 3-1 to 4-1. Given the additional benefits of reduced harm and loss of life that stems from reducing HAIs, this figure would no doubt be an attractive value proposition for the policy maker compared to many alternatives, especially if these returns can be gained at the economic margin. Minimising HAI with resistant organisms is critical in reducing patient harm as well as antimicrobial resistance. The majority of studies examined by Bacon et al. (2020) showed reduction in infections such as C.Difficile following a period of antimicrobial stewardship. Multi-modal interventions to prevent specific infection and spread of resistant organisms in are considered the most effective. The most common components of these interventions are environmental cleaning, hand hygiene, patient isolation, and contact precaution, testing, and surveillance. Interventions to address resistant HAI and indeed any type of harm have a strong socio-technical component. They require staffing, behaviour change technological resources, and provider buyin. This is complex and costly but given the systemic and global risks of these infections, considerable marginal returns on investment are likely if the right culture and other institutional settings are created. Hand hygiene, a fundamental aspect of reducing HAI, serves to illustrate the critical nature and cost of socio-technical change (Bacon et al. 2020; GHP 2020). In terms of hardware and infrastructure, hand hygiene is an extremely cheap intervention. However, implementing behaviour and cultural change across an organisation can be challenging and therefore costly (Le et al. 2019). For example, compliance with the WHO '5 moments' protocol of hand hygiene practice even in medical and surgical intensive care units has been

found to be as low as 42.6% (Stahmeyer et al. 2017). The main direct cost of improving hand hygiene is not soap, gel or dispensers, but staff time. The low compliance rate amounted to between 8.3 minutes and 11.1 minutes per patient per patient day. Full compliance would result in approximately an hour spent on hand hygiene per patient per day (Stahmeyer et al. 2017). A range of ways exist to promote hand hygiene in the healthcare setting. One study found that installing touchless dispensers in an intensive care unit resulted in an average 53% increase in usage across the unit. Usage of dispensers located next to patients almost doubled (Scheithauer et al. 2011). However, the importance of organisational-level levers such as a safety culture in facilitating the necessary behavioural change must again be emphasised. Turning to specific HAI types, CAUTI is a major source of additional costs but also are amenable to reduction through changed nursing practices such as inter alia more prudent use of catheters and better insertion protocols. Using chlorhexidine instead of saline solution cleaning prior to catheter insertion has been demonstrated to be a simple but effective method to reduce incidence by over 70% (Mitchell et al. 2019). However, as with many interventions to reduce harm, this is more costly than usual practice. Not only is chlorhexidine approximately twice the price of saline solution, shifting to its use requires a change in established nursing practice that can often be hard to shift. Mitchell et al. (2019) demonstrated that using the more expensive chlorhexidine solution can be deliver a good ROI. In an Australian hospital setting, it resulted in savings of AUD 387 909 per 100 000 catheterisations through shorter length of stay and treatment costs, freeing up 282 ward 32 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 bed days per year. Across all Australian public hospitals (3.06 million overnight admissions) this would equate to AUD 2.9 million and 2 160 bed days each year. The intervention resulted in a gain of 1.43 QALYS per 100 000 catheterisations, suggesting a 75% probability of the intervention being cost-effective at a cost-utility ratio of AUD 28 000 (USD 19 000). Evidence for preventing and managing sepsis is mixed (Bacon et al 2020). However, implementing a multi-faceted sepsis reduction programme across a large Australian public cancer hospital resulted in fewer ICU admissions, shorter length of stay and lower mortality. Postimplementation, the costs of admission were AUD 8 363 lower per non-surgical patient, a 30% reduction (Thursky et al. 2018). Unfortunately, implementation and maintenance costs of the programme were not compared to the savings, again underscoring the need for more research and greater rigour in economic analyses of safety interventions. However, the authors describe that implementation required “considerable effort” across all levels of the hospital. This included education and training of staff, nurse credentialing and changes in culture and practice. Such an undertaking would require considerable resourcing. Nevertheless, it would be surprising to expect the cost to approach 30% of patient admission revenues. Patients who develop sepsis can deteriorate rapidly. Failure to detect and rescue deteriorating patients exerts considerable harm especially in the hospital setting. Implementing patient monitoring systems (PMS) shows mixed and moderate evidence for a reduction in rescue events and on mortality, length of stay and ICU admissions. PMS

with clinical monitoring seems to show little effect on mortality, while PMS with intermittent vital sign input has a moderate and inconsistent association with mortality (Bacon et al. 2020). The evidence for rapid response teams is inconclusive, with moderate evidence that they can decrease cardiac arrest rates on normal wards (Bacon et al. 2020). These interventions can be costly to implement and maintain. Better economic evaluations are needed to make an informed judgement on their value. Pressure ulcers and falls must be reduced, especially in long-term care Pressure ulcers and patient falls are more prevalent in the non-acute setting such as long-term care. While complete eradication of these adverse events is realistically impossible, significant reduction in their prevalence has been demonstrated. Pressure ulcer incidence can be reduced with better protocols that include inspection, mobility, nutrition and hydration, and incontinence/moisture management. Falls risk can be managed with education and environmental risk reduction for falls. All require significant changes in behaviour, physical environment and organisation culture. The economic value of preventing pressure ulcers among LTC patients is discussed in a recent report OECD report (de Bienassis et al 2020). Wood et al. (2019) evaluated a collaborative approach to reduce pressure ulcers across provider organisations in the north-east of England. The programme was not costed but resulted in a reduction of pressure ulcer incidence of 36% in year 1 and 33% in year 2 of the study. The total estimated reduction in the number of marginal bed days lost was 220-352 across the region over two years. Barakat-Johnson et al (2019) studied the impact of healthcare-acquired pressure ulcer reduction programme in an Australian health region. A 51.4% reduction in incidence and a 71.6% reduction in prevalence were reported over 3 years. The authors estimate that the programme delivered net savings of AUD 837 387 (23% of relevant care costs). Implementation costs principally comprised changing staff behaviour through education and training. In the inpatient setting, Whitty et al. (2017) estimated that a pressure ulcer prevention bundle in an Australian tertiary hospital produced a negative result. The bundle cost AUD 144.91 more per patient than standard care, with the largest contributor being clinical nurse time for repositioning and skin inspection. The cost per pressure ulcer avoided was estimated at AUD 3 296. The length of stay was unexpectedly higher in the care bundle group. The net monetary benefit for the care bundle was estimated at −AUD 2 320 per patient, suggesting the bundle was not an efficient use of resources in the tertiary hospital setting. Investing in falls prevention can also deliver a good return in the LTC setting (de Bienassis et al 2020). Evidence suggests that some inpatient groups should also be targeted. A patient-centered falls prevention programme in an Ontario (Canada) hospital’s Transitional Care Unit resulted in an average net savings of CAD 5 848 per month. Implementing this intervention across all similar facilities in Ontario could potentially save almost CAD 8 million annually (Mendlowitz et al. 2020). Haines et al. (2013) studied the economics of a fall prevention programme in rehabilitation inpatients. The intervention comprised multimedia patient education with trained health professional follow-up. The cost per fall prevented was AUD 294 and AUD 526 to prevent a patient from becoming a ‘faller’. With the average

incremental cost of a fall being AUD 14 591, the interventions would appear to have a good ROI. The probability of the complete program being both more effective and less costly (from the health service perspective) compared to usual care was estimated to be 52%. For VTE prophylaxis, aspirin can offer an efficient alternative VTE exerts a large health and cost burden, and most cases can be prevented. The highest risk factor for developing VTE is a hospital admission, with surgical patients at particular risk. Without appropriate prophylaxis, rates of VTE among arthroplasty patients have been estimated to be as high as 60 percent (Stewart and Freshour 2013). Previous reports have highlighted the clinical and economic value of VTE risk assessment and prophylaxis. Checklists and protocols to improve safety and outcomes in surgical patients have been established in both developing and developed countries (Haynes et al. 2009; Ramsay et al. 2019; Seme et al. 2010; Shekelle et al. 2013; Slawomirski, Auraaen, and Klazinga 2017). A series of economic evaluations have focused on novel anticoagulants that have recently entered the market. Many are of high quality but most are industry-sponsored (Carter et al. 2020). 39 Recent research has focused on assessing the effectiveness of aspirin instead of other drugs with higher risk profile and/or cost. A systematic review by Bacon et al. (2020) found that, following major orthopaedic surgery, aspirin was generally found to be of similar effectiveness as other agents. Aspirin is significantly cheaper than newer alternatives. More prospective RCTs are needed to directly compare the effectiveness of aspirin to other prophylactic methods across 39 All ten industry-sponsored studies of VTE prophylaxis found by Carter et al (2020) produced a favourable result, with an average probability of cost-effectiveness of 88%. Two of the three publicly-sponsored studies had a favourable result, with an average probability of 52%. 34 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 patient risk levels but aspirin combined with mechanical prophylaxis should be considered, particularly among low-risk patients as an intervention with good ROI. Evidence on reducing medication errors is mixed Medication errors resulting in adverse drug events are a major source of avoidable patient harm. Several systematic reviews have found that medication reconciliation by pharmacists at hospital discharge significantly reduces the risk of medication discrepancies and subsequent harm. Pharmacist-led medication reconciliation prior to hospital discharge is cost-saving (in net terms) if it reduces the incidence of medication discrepancies by 11% or more (Shekelle et al. 2013). Targeting of high-risk individuals would achieve a higher net benefit than a non-targeted intervention if the sensitivity and specificity of a screening tool were at least 90% and 70%, respectively (Najafzadeh et al. 2016). However, studies of domiciliary interventions by pharmacists to reduce medication error tell a different story. Abbott et al. (2020) reviewed randomised, controlled trials (RCTs) assessing the impact of pharmacist home visits for individuals at risk of adverse drug events. Their metaanalysis found no evidence of effect on hospital admission or mortality rates. No consistent evidence on quality of life, adherence and knowledge was found. A RCT of pharmacist-led domiciliary medication review for older people in England found no evidence that this reduced hospital admissions. An economic evaluation of

the results suggested an incremental cost per QALY gained by the intervention of GBP 54 454, finding only a 25% probability that home-based medication review is cost effective at a threshold of GBP 30 000 per QALY, with marginal cost per life year gained at GBP 33 541 (Pacini et al. 2007). Avery et al. (2012) conducted a RCT of a pharmacist-led IT intervention for medication errors called 'PINCER' for general practices in the United Kingdom. At 12 months after commencement, the mean incremental cost per medication error avoided was GBP 66.53. A follow up economic evaluation found that PINCER generated approximately 1 QALY per practice, at GBP 2 679 less compared with practices in the control group. Modelling suggests that PINCER had a 59% probability of being cost-effective at a GBP 20 000 per QALY threshold (Rachel A. Elliott et al. 2014). Another study found that pharmacist-led medication reconciliation at the point of admission to hospital had a 60% probability of being cost-effective at GBP 10 000 per QALY (Karnon, Campbell, and Czoski-Murray 2009). 40These findings suggest that pharmacist-led medication reconciliation may present the 'best buy' when applied during transition between care settings as opposed to home-based medication review. Cost appears to be the main factor. Pharmacists are typically already employed at a hospital, meaning that the marginal cost of their time will be lower than for home visits where they would need to be employed specifically for that purpose. In addition, a registered nurse may be equally equipped, especially when supported by ICT modalities, to conduct a medication review as part of a routine visit to the patient's home. 40 Digital technology offers more promise to reduce medication error and adverse drug events. Its potential and current evidence are discussed in Section 3.2. | 35 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Better transitions of care are worth the investment Stronger evidence can be found for the value of clinical handover. Yao et al. (2012) estimated the cost-effectiveness of a generic service delivery intervention to improve clinical handover in a large European hospital with 50,000 discharges each year. Harm attributable to handover errors was found to cost the organisation nearly EUR 3.5 million per annum. Modelling suggests that an intervention to improve handover would reduce these incidents by a third. The annual cost savings were estimated at EUR 771,602, which is considerable at the hospital level. Under the base case (21% effectiveness), 515 QALYs could be generated in one year, at EUR 214 per QALY – a highly cost-effective intervention. More recently, Bacon et al (2020) analysed 13 studies and 1 systematic review of interventions to improve transitions of care, including BOOST (Better Outcomes for Older Adults through Safe Transitions), CTI (Care Transition Intervention) and TCM (Transitional Care Model Model). The evidence suggests that these clinical handover programmes have been effective in reducing readmission rates and are associated with significant reductions in healthcare costs which appear to offset the costs of their implementation and maintenance.41 But the value of clinical-level interventions is contingent broader factors Clearly, a range of interventions to improve safety at the clinical level are a worth investing in. Infections, VTE, pressure ulcers and falls are a fruitful target, as are lapses in communication during care transitions. However, how much should be invested before the marginal returns begin to diminish? This will depend on the current level of

2

investment, how results are tracked as well as how geared-up, or fertile, clinical microsystems are for implementation and improvement. All safety interventions that are worthy of investment, based on the literature at least, require some underlying actions: • change in behaviour and daily practice • realigned responsibilities and accountability • requisite knowledge, expertise and resilience • adequate levels of staffing • better communication and information transfer • involvement and engagement of patients Their effectiveness is therefore highly likely to be enhanced (or diminished), and their implementation costs reduced (or inflated), by more fundamental factors spanning entire organisations and systems. This means investment in cross-cutting strategies, enabling technologies, processes and workflows as well as more intangible aspects of how complex systems function such as leadership, attitudes and organisational culture. These are addressed in the following section. 3.2 Cross-cutting organisational strategies are pivotal and require investment Less empirical evidence on effectiveness and value exists for organisational-level interventions to improve safety. This is unsurprising given the difficulty of establishing causal links between cross-cutting strategies and reduction in harm compared to interventions aimed specifically at 41 Costs and savings were analysed for CTI and TCM models only (Bacon et al 2020). 36 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 reducing specific types of adverse event. Nevertheless, interventions that build broader resilience and the institutional capacity to reduce harm are considered essential under a systems approach to safety (Braithwaite, Wears, and Hollnagel 2015). These are typically implemented across an entire health service or organisation. The evidence for digital technology and patient safety is growing Functionality of digital technologies such as electronic health records (EHRs) and clinical decision support (CDS) has substantial potential to reduce the risk of adverse events. A 2015 review of reviews on health IT and patient safety found that the evidence for beneficial impact on safety is widespread, and that the number of studies showing positive effects (59%) substantially exceed the number of negative studies (8%) or studies with neutral or mixed effects (9% and 24%). The literature included a wide range of evaluations of both commercial and locally developed health IT systems (Banger and Graber 2015). A systematic review and meta-analysis found that an “EHR system, when properly implemented, can improve the quality of healthcare, increasing time efficiency and guideline adherence and reducing medication errors and adverse drug events.” However, no association with patient mortality was determined (Campanella et al. 2016). Hydari, Telang, and Marella (2019) examined the incidence of adverse events reported from 231 Pennsylvania hospitals from 2005 to 2012, based on survey data from the Healthcare Information and Management Systems Society (HIMSS). After controlling for several confounding factors, the authors found that hospitals adopting advanced EHRs was associated with a 27% overall reduction in reported patient safety events, a 30% decline in medication errors and a 25% decline in procedure-related errors. Computerised provider order entry (CPOE) appears to be very effective and cost-saving. Forrester et al. (2014) estimated the cost CPOE versus traditional paper-based prescribing in reducing medication errors and

adverse drug events in the ambulatory setting of a mid-sized multidisciplinary medical group comprising 400 providers. Implementing CPOE cost USD 18 million less than paper prescribing and was associated with 1.5 million fewer medication errors and 14,500 fewer ADEs over five years. Encinosa and Bae (2015) studied adverse drug events in Florida hospitals, and whether use of health IT affected rates. Hospitals that had adopted all five of the core meaningful use measures saw medication error rates drop by a third. Physician buy-in was found to be a dominant factor. Adverse drug events increased by 14% at hospitals reporting physician resistance to meaningful use versus a 52% ADE reduction at facilities where the health IT measures were better accepted. The five core meaningful use measures regarding medication management included: 1. Using CPOE systems for medication orders; 2. Implementing decision support systems to check for drug–drug and drug–allergy interactions; 3. Having the capability to electronically exchange key clinical information (such as medication lists, medication allergies, and test results) with other providers; 4. Maintaining an active medication list; and 5. Maintaining an active medication allergy list. Leung et al. (2013) studied ADEs rates in five hospitals, correlated these rates with scoring on a tool that measures the functionality of CPOE. Both real and potential adverse drug events were   highly correlated with scores on the CPOE instrument, with a 43% relative risk reduction for every 5% increase in CPOE score. Diagnostic error has been earmarked for improvement through health IT for some time. By improving documentation, communication and coordination of care, EHR systems can help ensure that information is fully available at the point of care and that test results are seen and acted on (El-Kareh, Hasan, and Schiff 2013; Schiff and Bates 2010; Singh et al. 2010). For example, Zuccotti et al. (2014) studied of 477 malpractice claims involving seven different hospitals in the United States, concluding that over half of these could have been effectively prevented through existing and available digital decision support tools that were not in use. Bacon et al (2020) found that digital tools to reduce diagnostic error, such as clinical decision support (CDS) and result notification systems (RNS) have improved diagnosis in exploratory and validation studies. Results varied by type of test result, setting, synchronous vs. asynchronous communication, and manual vs. automated alerting mechanisms. However, most systems need to be fully implemented and tested in a clinical setting. Early evidence suggests that they are best used to complement not replace the clinician's decisionmaking process, but economic analyses are still lacking. Tackling diagnostic error must also incorporate education and training as well as patient engagement, which is discussed later. High-quality economic evaluations of digital solutions for patient safety have not yet been conducted. Zsifkovits et al (2016) suggest that implementing an electronic medication ordering system, comprising a CPOE system with a Clinical Decision Support System, across the EU can save EUR 6 billion a year. However, implementing digital technology is notoriously expensive. Most implementation costs come from adapting workflows and changing daily practice as opposed to the acquisition of hardware, software and infrastructure. There is also the added risk that a high proportion of 'digital solutions' implemented at system or organisational level are not

successful (OECD 2019a). Two considerations may make these costs more palatable. First, well designed and implemented digital platforms – especially EHRs - bestow a range of other advantages to a health organisation in addition to improving safety. These include better care co-ordination (if the platform spans or is interoperable across settings), patient engagement and easier administration. The costs can therefore be distributed across these other benefits (and means that the ROI of these technologies purely in terms of safety are difficult to estimate). Second, while the initial cost of implementation is high, the marginal or incremental costs of maintenance can drop off significantly. Preventing the 1 000th medication error is much cheaper than preventing the first. Costs may not be so daunting if spread over several years, especially given the other potential benefits. However, IT solutions come with an important proviso that the systems or platforms must be able to exchange across silos, who must accept them as tools that makes their work of caring for patients easier, not harder. Unfortunately, many examples of the latter can be found (OECD 2019a). Three key messages on digital technology and safety can be distilled from the literature. First, more evidence comparing the implementation costs, health benefits and savings, and the success factors of these technologies is needed. Second, public policy plays a crucial role. Governance of personal health data - the lifeblood of these technologies and the knowledge created – is the responsibility of governments, especially in terms of assuring security of the data. Third, 38 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 governments must also guide the implementation of technical and operational standards for the introduction of digital technologies related to digitalization. Specifically to patient safety, policy can play a key role in explicitly guiding technical innovation as part of assuring public safety and health through a combination of governance, regulation and incentives (OECD 2019a). Optimal staffing levels need to be assured but depend on local requirements Links between staffing levels, patient turnover rates and safety have been established, especially in the acute care setting. However, exact quotas or ratios are difficult to pinpoint (Keough 2013). This depends heavily on contextual factors such as patient complexity and casemix, other resourcing, staff experience, workflow as well as the physical environment, layout and organisation of care facilities. Most studies of staffing use mortality, an important but rather blunt metric, as the outcome. Many studies compare different hospitals, but this may be flawed due to endogenous differences between facilities. Studies that examine staffing fluctuations within the same organisation are preferred, assuming independent factors such as HR policy and patient complexity remain consistent over the period studied. There is also a paucity of quality studies into optimal ratios in non-acute care. Needleman et al. (2019) analysed 6 years of inpatient data from two tertiary and one community hospital in the United States, examining the association between patient mortality and registered nurse (RN) and nursing support staff (NSS) levels. Low RN staffing (compared to the ward average) across an entire admission increased the mortality risk by 2.3%, and 9.1% if the first and last days of the admission were excluded. For NSS, the figures were 3.0% and 3.2% respectively. Exposure to both low RN and NSS

staffing levels was estimated to increase mortality risk by 2.5% for the entire episode and 13.6% if the first and last days were excluded. Griffiths et al. (2019) examined the association between RN and NSS staffing levels in a large hospital in the United Kingdom. Using 3 years of admitted patient data, they found each day of RN staffing below the mean resulted in a 3% higher risk of death. The corresponding figure for NSS was 4%. Each additional RN hour per patient reduced patient mortality risk in a near-linear fashion (the more RNs, the lower the risk). 42 NSS staffing levels below and above the ward mean appeared to increase patient mortality risk (i.e. U-shaped curve) (Griffiths et al. 2019). This suggests that an optimal level of NSS may exist (with a mortality metric). This needs further exploration, with the authors suggesting that a greater number of NSS may create a division of labour resulting in RNs spending less time directly with patients. Another explanation may be that sicker patients (at a higher baseline risk of mortality) attract higher NSS levels, making the observed increase in mortality endogenous. Nevertheless, the finding suggests that increasing the number of lesser trained staff may not remedy the effects of nursing shortages in hospital care. An older meta-analysis found a diminishing marginal effect of RNs in hospital care, with lower incremental benefit at higher staffing levels. However, the analysis drew on studies based in countries where average RN to patient ratios are typically higher than in the UK (Kane et al. 2007). The way staff are managed is also clearly important, with the role of the ward managers identified as critical to safety and other outcomes (NIHR 2019). This role is pivotal in staff engagement and 42 Although the curve presented in the paper does flatten slightly at the higher end of RN staffing levels. | 39 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 well-being, which translates to productivity and culture within the clinical microsystem. Even though this role requires no formal patient interaction, it can greatly influence patient outcomes. Getting the right people with the requisite skills, attributes and experience into these roles is an important investment in safety. An optimal staff ratio depends on several contextual factors and cannot be prescribed. A point clearly exists beyond which the cost of additional staffing adds too little value compared to alternative ways in which those resources can be deployed. The cost implications are considerable as the costs of permanent staff do not diminish greatly at the margin, and the costs of locum staff can be high. Nursing support staff are best seen as complementary not supplementary to registered nurses. Policy makers should enable health services to determine the best staffing ratios based on local requirements. This can be enabled through flexible governance, including an infrastructure to measure harm accurately and to benchmark against peers. Beyond that, an adequate supply of trained personnel is needed to build resilience and capacity across a health system. This is a broader policy matter extending beyond individual organisations and is discussed in Section 3.3. Evidence for the role of organisational culture is growing Patient safety culture is a pattern of individual and organisational behaviour, based upon shared beliefs and values that continuously seeks to minimise patient harm, which may result from the process of care delivery (de Bienassis et al. 2020). Culture is difficult to define and to study, especially in terms of finding direct causation of harm reduction in different contexts. However, enough

evidence has now been generated to inform reviews on the subject. For example, an analysis of over 60 studies examining the relationship between organisational and workplace cultures, and patient outcomes, finding that over 70% of studies reported exclusively positive associations or a mixture of positive associations and no associations between culture and patient outcomes (Braithwaite et al. 2017). Other research on the effects of safety culture and patient outcomes has found mixed results. For example, a study of safety culture in NICUs did find that safety culture was significantly correlated with reduced hospital acquired infections, other quality metrics, such as antenatal corticosteroids, hypothermia, pneumothorax, chronic lung disease, growth velocity, and mortality were not correlated (Profit et al. 2018). Culture is notoriously difficult to change sustainably (Andres et al. 2019) and a range of programmes and interventions can contribute towards a safety culture across an organisation. For example, Crew Resource Management (CRM) is a systematic approach to training leaders and staff and incorporating safety tools such as checklists into routine activities of a team, organisation or system. The aim is to foster permanent change in attitude and behaviour that permeates everything that is done. It was originally developed in aviation and subsequently translated to the healthcare industry (Moffatt-Bruce et al. 2017). CRM can be effective with evidence suggesting that it results in greater knowledge, better confidence and increase use of teamwork skills, as well as improved clinical processes and improved patient outcomes (Bacon et al 2020). Moffat-Bruce et al (2017) studied the implementation of a CRM programme at a large Academic Medical Centre in the United States, comprising 6 hospitals across two campuses, employing some 100 000 staff and caring for a population of over 1.5 million. The programme was 40 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 implemented over 4 years at a cost of USD 3.6 million. Most of the costs were attributed to training and staff time. Compared to the baseline year, significant reductions in several types of hospitalacquired harm43 were observed. A total 735 adverse events were estimated to have been avoided over the subsequent 3-year period at about USD 4 900 per adverse event avoided.44 This is said to have generate between USD 12.6 million and USD 28 million in savings, translating to an ROI of 3.5 to 6.8 per dollar over four years. Despite its limitations (e.g. only one year of baseline data, no comparison or control hospital, omission of prominent AEs such as VTE), this study provides ground for optimism that investing in broad-based, systemic patient safety strategies, including those that aim to improve organisational culture, is worthwhile. Even the lower ROI estimate of 3.5 represents good value for money. Importantly, about two-thirds (USD 2.44 million) of the estimated implementation costs were attributed to the initial roll-out of the CRMP. Ongoing expenses over the final year of the study were estimated to be USD 1.11 million – diminishing at the margin. This suggests that the ROI of this programme may be higher over a longer period if the reduction in harm can be maintained. Evidence for interventions to improve teamwork such as Team Strategies and Tools to Enhance Performance and Patient Safety (TeamSTEPPS®), simulation and brief/debrief suggest mainly improvement in team member perception and confidence. Some reductions

in adverse events such as HAI have been found, but no economic analyses are available (Bacon et al 2020). Enhancing the resilience of patients is critical Discussion on the topic of safety has recently focused on building resilience within healthcare teams, organisations and systems to cope with complexity and prevent harm (see Section on governance below). Arguably the most important participant in the health care interaction and key member of the care team is, of course, the patient. It is therefore essential to also discuss how to make patients more resilient and engage them in care as part of any strategy to prevent harm and improve other outcomes. A people-centred approach is a critical element in safe, high-quality care. Previous reports highlighted that patient and family engagement is strongly associated with better outcomes and less harm, and that such organisational interventions are very likely to represent good economic value (Ane Auraaen, Klazinga, and Slawomirski 2018; Slawomirski, Auraaen, and Klazinga 2017). Patient engagement, empowerment of patients and their informal carers, is not straightforward. Its implementation and practice depends on personal capacity, knowledge and relationships as well as personal values and priorities, especially when it encompasses family members and informal carers (Duhn and Medves 2018). Some studies show a statistically significant association with reduction in adverse events. But the approach depends on the clinical context and the quality of its implementation. Self-dialysis, for example, can empower patients and improve their experience while also reducing mortality and hospitalisation (Shinkman 2018). 43 1. falls 2. ventilator-associated pneumonia (VAP) 3. pressure ulcers 4. surgical site infection 5. C. difficile infection 6. adverse drug event 7. central line associated blood stream infection (CLABSI) 44 A reduction in all adverse event types was observed with the exception of C.difficile infections, of which there were 192 more than expected over the follow-up period. | 41 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 A recent overview of the literature highlighted the importance of digital technology -- especially access to medical records, laboratory results and medication lists as well as portals that permit communication with providers – in reducing several types of harm (Sharma et al. 2018). However, systematic reviews reveal a lack of understanding about the effects of engagement on patient safety among providers, patients, and families. Linking to educational interventions appears to result in positive perceptions and attitudes about patient engagement among healthcare providers (Bacon et al. 2020). Education of patients is critically important (Sharma et al. 2018). Health literacy that changes the attitudes and behaviour of the patient is a powerful predictor of care outcomes. Fostering better health literacy among at-risk patient populations represents a good investment, as the benefits will follow the patient along their healthcare journey. This may be especially important for the growing population segments that are managing one or more chronic condition, who see multiple providers and access a range of services over time. Yet, recent evidence suggests that OECD countries are under-investing in, and underachieving satisfactory levels of health literacy (Moreira 2018). Without leadership and positive role-modelling at all levels, a systemic pivot towards placing the patient and their informal carers at the centre of every action and activity will not be possible. It is difficult to assign a

precise financial value (or cost) to leadership, and perhaps it is better seen through a lens of political economy in health systems. It may be more about investing political capital by clinical, organisational and political leaders. The value of education is in fostering the right attitudes, behaviours and skills Education and training are important components of many clinical-level interventions including failure to rescue, antimicrobial stewardship and patient engagement. For practicing professionals, didactic or simulation training targeting clinical reasoning and diagnostic safety can be successfully delivered online. Bacon et al (2020) found that studies of simulation-based education curricula for physicians and nurses report improvements in safety process and outcome measures. Cost savings were associated with reductions in central-line infections, overnight hospital days, or additional hospital days. However, over the long-run education is also a fruitful investment that can have considerable return in patient safety as it fosters not just the right technical skills in health professionals and health workers more generally. Good undergraduate and post-graduate education pivotal in encouraging certain attitudes, behaviours and other transversal skills that are important in maximising patient safety. Teaching only a simple, reductionist understanding of medical knowledge and practice may not prepare clinicians for real-world medical practice, where decisions incorporate more complicated kinds of information and require an element of tacit knowing, first formulated by Michael Polanyi in the mid-20th century (Henry 2010). Training in metacognitive ability, complexity science and human factors has been shown to improve not only the 'soft skills' that foster better communication, team work and people-centred care, but also what was traditionally considered the 'hard', scientific and rational component of clinical practice such diagnostic accuracy - a major source of patient harm across settings. While important at both undergraduate and postgraduate levels, the effects are particularly evident as clinical experience increases (Bacon et al 2020). 42 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 The 'hidden curriculum' is also an important part of medical education. It includes the way they are socialised and role-modelling by teachers and supervisors, influencing what students learn in addition to what they are taught (Hafferty 1998). All of this determines the type of clinicians students eventually become and, as such, exerts a strong influence on organisational culture and the quality and safety of care (Slawomirski, Auraaen, and Klazinga 2017). In short, front-line clinical work does not take place in a vacuum. The cross-cutting strategies and interventions discussed in this section do not always affect service delivery immediately or directly, are nevertheless an important part of instituting (and institutionalising) safety practices across a health system. Similarly, health organisations do not operate in isolation from the broader health system, and there is a range of system-level policies and programmes that can foster a better environment to implement safer practices at organisational and clinical level. These are addressed in the next section. 3.3 System-level strategies are the foundation for safety The survey informing the first OECD report on the economics of patient safety asked a panel of experts to estimate the individual ROI of 42 safety interventions. It then asked respondents to select seven interventions that

they would recommend implementing at the time of the survey in a 'typical' OECD health system. While the clinical-level interventions had the best individual costbenefit ratios, introducing a system-level view and scarcity overwhelmingly favoured the systemic and organisational strategies such as professional education and training, clinical governance systems and frameworks, safety standards linked to accreditation and certification, EHR systems, and a national agency responsible for patient safety (Slawomirski, Auraaen, and Klazinga 2017). Compared to clinical-level interventions, these broad-based strategies take a considerable amount of time to establish and are challenging to implement and maintain. Given their scope and scale, it is difficult to measure their impact on specific safety outcomes using traditional methods. Such studies will always be observational and lacking in suitable controls, with the counterfactual always presenting room for doubt. However, an absence of empirical evidence does not mean that systemic policy interventions are not an important or effective part of patient safety. Consensus is growing that broad-based strategies targeting entire systems not only add value in their own right, but provide the leverage and the framework for organisational- and clinical-level interventions to be more effective, especially given the multitude of different contexts these need to be implemented in across health systems. National, whole-of-system programmes can be effective A pre-eminent example of an effective broad-based intervention to reduce harm across a complex and fragmented health system is the Hospital-Acquired Conditions (HAC) Reduction Program in the United States. The list of HACs comprises 28 patient safety events such as infection, VTE, adverse drug events, pressure ulcers and falls.45 The programme applies to all acute care episodes across the country for patients covered by Medicare, which has over 100 million enrolees. 45 For more detail see www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/AcuteInpatientPPS/HACReduction-Program | 43 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 The latest estimates from the Agency for Healthcare Research and Quality (AHRQ) suggest a 13% reduction in the recorded HAC rate between 2014 and 2017 (Figure 5). This reduction translates 20 500 inpatient deaths averted, and USD 7.7 billion in costs saved over the 3-year period (AHRQ 2019). This equates to approximately 2.2 million DALYs and 1.1% of the annual Medicare budget saved.46 A separate analysis suggests that healthcare–associated Clostridium difficile infection across the United States reportedly decreased by 36% between 2011 and 2017, whereas community-acquired infection rates remained unchanged (Guh et al. 2020). Figure 5. Updated 2014 data, with 2015, 2016, and preliminary 2017 national HAC rate data, and 2019 HAC goal Source: AHRQ (2019) The HAC Reduction Program is built on a pay-for-performance scheme with revenue adjustment of 1% based on hospitals' relative performance on the number and rate of HACs, degree of 46 Assuming 2.5 DALYs per event and based on the 2017 Medicare expenditure of USD 706 billion. 44 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 improvement on past performance, patient complexity and other factors. The adjustment itself is said to save Medicare approximately USD 350 Million per annum (NEJM Catalyst 2018). It is unlikely that a 1% revenue adjustment is on its own enough incentive to drive change on that

scale. The programme comprises several complementary initiatives of the Value-Based Purchasing scheme of the Centers for Medicare and Medicaid (CMS). These include public reporting, electronic health record implementation, initiatives targeted as specific types of harm as well as local quality improvement efforts, which ideally work in concert to achieve the objective of the programme.47 A well-orchestrated national program can therefore result improved safety outcomes and associated savings. The operational costs of the initiative are not known. But with combined savings of USD 8.7 billion over 3 years (350 million annually plus 7.7 billion in reduced admission costs) the ROI is likely to be 3:1 even if annual operational and administrative costs across the system approach USD 1 Billion per year.48 At this price, the programme can be said to cost approximately USD 3.30 per prevented complication, USD 146 000 per death prevented and USD 1 363 per DALY averted – a very favourable cost-utility ratio in the United States context (see Section 2.4). Safety governance is essential but must be fit for purpose Governance has been accepted as an essential mechanism to manage risk, minimise failure and maximise outcomes in any high-risk endeavour, including health care. Governance in the context of patient safety covers a range of steering and rule-making related functions carried out by governments and decisions makers to improve patient safety. These functions flow across all levels of a healthcare systems. Governance relies particularly on 1. clearly defined roles and responsibilities, 2. key accountabilities 3. established systems for measurement and monitoring, and 4. capacity and skills of the workforce (Auraaen, Saar, and Klazinga 2020). While much can be learned from other industries, it is important to accept that health also differs in terms of its scope and complexity. This can be demonstrated be examining the risk model developed by Pariès et al. (2019) that places the activities of an industry on two axes: organisational control (the level of autonomy of front line operators) and predetermination (the management of uncertainty) (Figure 6; see also Box 3). Endeavours that exhibit low predetermination can be considered as more adaptive, allowing for more flexibility and innovation. Therefore, those in the top right corner are most suited to highreliability principles. These focus on the capacity to operate high-risk processes by way of maintaining a tight control of existing risk. Activities in the bottom left corner may be most suited to the principles of another approach to safety: resilience, a model that allows efficient variability and acceptance of uncertainty as a key component of managing safety. 47 The initiative may have some unintended consequences that have not been explored. These are outlined in the incentives and financing section below. 48 This figure would include costs borne by CMS as well as by the participating hospitals which need to comply with reporting requirements and, presumably, implement safety-enhancing interventions. | 45 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Figure 6. Governance model based on pre-determination and organisational control Low PRE-DETERMINATION High High ORGANISATIONAL CONTROL Low Hierarchical – adaptive • Fire brigades • Aircraft carriers • Submarines • Commando units • Surgery • Long-term care Hierarchical – normative • Nuclear • Aerospace • Rail • Heavy industrial processes • Radiotherapy • Blood transfusion • Deep sea fishing •

Road transport • Emergency care • Primary care • Paramedics Autonomous – adaptive • Offshore drilling • ATM • Intensive care • Anaesthesia Polycentric - normative Source: Paries et al (2019) An example of the difference between the high-reliability approach and resilience engineering is illustrated in that of aviation (upper right) as compared to deep sea fishing (bottom left). Both activities entail significant exposure to risk, but the approach for managing risk varies significantly due to the inherent characteristics of these industries. Aviation primarily handles risk by reducing risk exposure, and tightly regulating training, staffing, and operations. Organisations dealing with a constantly changing work environment, such as deep sea fishing or intensive care units, are less able to manage risk by using rules and procedures and may be more amenable to resilience engineering (Vincent and Amalberti 2016). Resilience engineering relies on the intelligence, adaptability and resilience of frontline operators, so, organisations focus on providing operators the support they need to address and confront the risks to which they are exposed Health is unique in that its various settings and activities are spread across all four quadrants in Figure 4. This breadth of scope presents a challenge for designing a suitable governance model across an entire health system, which is not only very disaggregated but often also falls under various legal regimes and jurisdictions. For example, primary care providers in many countries operate as a small business, in contrast to hospitals. In Australia acute care and primary care are funded and overseen by a different level of government. Health is so broad that it is better seen as comprising several industries in one. Different modes of governance may therefore be needed for different kinds of care. Some specialties may be candidates for ultra-safe care (such as radiotherapy) while others may benefit from high reliability (chronic care) or ultra-adaptive models (trauma) approaches, where the safety model gives more priority to flexibility and the ability to adapt to novel circumstances. These principles need to be applied to different parts of health care through targeted high reliability constructions and through fostering resilience among stakeholders, including the patients. The long history of self-regulation also has an important effect on safety governance in health care. Regulation is often seen in a negative way, considered intrusive and distracting from conduct of clinical care (Oikonomou et al. 2019). The regulatory landscape in healthcare is complex. It includes national laws, agencies, professional organisations and many other stakeholders. For considerable parts of health care, building capacity by following the principles of resilience engineering could be more appropriate than the comparison with high reliability organisations, which may be better suited for standardisation and top-down management. Concerns have been raised about the applicability of controls and safety mechanisms from other sectors regarding regulation and top-down approaches. A study in the NHS of 42 risk controls concluded that the adoption of hierarchical approaches borrowed from other industries may not be highly relevant in health care settings in their ability to increase the reliability of outcomes— and that a more dynamic and flexible approach may be needed (Liberati, Peerally, and DixonWoods 2018). The advantages and limitations of the conventional comparison with other highrisk

industries such as aviation are discussed in Box 3. Box 3. Comparing safety governance in health to other high-risk industries Parallels drawn between health and other industries can be useful but have limitations due to the inherent differences. For example, while professionalism is a common characteristic between aviation and health care, there are significant differences in terms of blame related to safety incidents, financial pressures, media coverage of mistakes, and concerns of safety for all levels of leadership and management (Kapur et al. 2016). In health, an adverse events most often affects one individual as opposed to large groups and the media coverage and pressure to adapt is not as high as in aviation. Reflection, investigation and learning are therefore not as rigorous. There is no such thing as a 'low level' incident in air travel. Any in-flight event that jeopardises the safety of passengers and crew is reported and thoroughly investigated—even near misses like engine failures appear in the media. In health, low level harms such as CAUTI are often disregarded, at worst seen as an unfortunate but unavoidable part of hospital care. They fly 'under the radar' of consciousness and consequence. This is a big challenge. Optimal safety management is also different because of the higher predictability of airplanes compared to patients (Helmreich, 2000). Faulty aircraft do not fly, period. In health the patient, by definition, presents with a standing level of risk. The literature suggests systemic barriers to making health care delivery ultra-safe, including "the need to limit the discretion of workers, the need to reduce worker autonomy, the need to make the transition from a craftsmanship mind-set to that of equivalent actors, the need for system level (senior leadership) arbitration to optimize safety strategies, and the need for simplification" in ultra-safe systems (Amalberti et al. 2005). Such arguments note that healthcare cannot be compared to high-reliability organisations due to variation in risk among medical specialties, insufficient definitions of medical error, and other structural constraints. There are other differences that relate to the broader structures and institutions of other industries. Remuneration is one of these. Unlike many healthcare providers, pilots, aircraft maintenance engineers, and air traffic controllers are paid agreed wages as opposed to widgets: the number of flights performed, passengers carried, parts replaced, or aircraft guided to take off or land. The behavioural drivers created by remuneration no doubt play an important role. | 47 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 A recent OECD report on patient safety governance found that no ideal or optimal patient safety governance model exists. It is more important that patient safety governance (a) complements overall health system governance and financing, and (b) aligns its individual components and functions. However, patient safety governance should include all healthcare settings, and not neglect fragmented and 'unwieldy' sectors (Ane Auraaen, Saar, and Klazinga 2020). The focus must be the patient, whose perspective should be included in the design, implementation and execution of governance models. Importantly, because many aspects of health care require resilience and adaptive thinking, governance should foster continuous learning from both harm and success, broadening the focus reacting to harm to risk assessment and management. A 'just' culture of transparency, openness and trust among

all stakeholders should be the aim. The importance of measurement means that data privacy/security policies and workforce preparedness must be incorporated (Ane Auraaen, Saar, and Klazinga 2020). Finally, safety governance should encourage healthcare financing and investment that aligns clinical risk with corporate risk and consider the costs of prevention in the context of the costs of harm. The key elements of measurement and financing are addressed in later sections. A peak body responsible for safety should play a part A national body responsible for patient safety is considered by many as an important institution to promote safety across a health system and lead to reductions in harm (Slawomirski, Auraaen, and Klazinga 2017). The establishment, powers and responsibilities of such an organisation can vary but it is commonly understood that its principal responsible would be institutionalising patient safety practices by aligning policies, methods, capacities and resources across an entire health system. This would comprise several functions including: • Strategy and stakeholder engagement • Data collection and analysis of safety and harm • Developing and maintaining standards • Research and analysis to inform the policy development process • Assisting health services with local improvement efforts • Developing and testing new safety concepts An important goal of such an institution is ensuring that patient safety is on the political and policy agenda. Involvement of key stakeholders especially patients and clinicians in its establishment and functions is critical. It need not be a large, costly bureaucracy. A strong argument can be made for such a body to play a role in a safety governance framework, with tightly defined strategic and operational functions to promote safety and reduce harm. It may also include the oversight of health service accreditation against safety standards. Accreditation can take several forms and range from rigid adherence to set standards to flexible approach based on local improvement. It can have a far-reaching impact, for example, influencing organisational culture (Andres et al. 2019). However, the evidence on the value of current accreditation schemes is mixed (Castro-Avila, Bloor, and Thompson 2019; Falstie-Jensen et al. 2015; Ashish Jha 2018; Lam et al. 2018). A national institution dedicated to safety may play an important role in developed and developing countries alike. For example, a review of national policies and strategies to improve patient safety 48 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 in Lebanon and Jordan found that both had successfully instituted safety and quality in national health plans and strategies, introduced licensing requirements for health professionals and organizations, and invested in health information systems. However, both lacked an explicit national policy for quality improvement and patient safety. Instead, a spread of several pieces of legal measures and national plans results in fragmentation and lack of clear articulation of responsibilities across the system. Incentive systems that link contractual agreement, regulations, accreditation, and performance indicators were underused or absent. Notably, both countries lack national sets of care quality indicators for performance measurement and benchmarking (ElJardali and Fadlallah 2017). The costs of safety governance are felt at both the central coordination point and the provider level. Implementing and adhering to the various functions and requirements of a governance model require time, money and resources. Blanchfield et al. (2018)

estimated the direct annual cost of maintaining the quality and safety governance requirements in a large United States healthcare organisation at USD 30 million, or 1.1% of net patient service revenue. Costs comprised measurement and reporting, safety, quality improvement and training and communication. Approximately 80% of costs was associated with satisfying the requirements of regulators, accreditors and payers. Just under 50% of these costs were associated with public reporting. Such costs may or may not be prohibitive. If the result is even a modest reduction in harm this is likely to represent a good investment. Nevertheless, reducing the administrative burden of compliance through technology and process innovation should form part of the safety governance agenda (see Box 4 below for an example). Analysis and action rely on a solid information infrastructure Data and information are critical to the success of any intervention to improve patient safety, at any level of the health system. The potential value of interoperable digital platforms where data follows patients was discussed earlier in this section. But data are also highly useful for secondary purposes. Timely information on performance has been shown to be a critical component in local improvement efforts. Data can be used for public reporting, patient information and governance and policy decisions. For example, clinical quality registries (CQRs) have been found to improve safety and quality of care by providing feedback to healthcare systems about specific areas in need of attention. Implementing recommendation of the Surgical Quality Improvement Programme (NSQIP) in the United States on preventing specific surgical post-operative events (glucose fluctuations and VTE) costs USD 8 321 per event avoided from the hospital perspective49 (Hollenbeak et al. 2011). The incremental cost of post-surgical VTE to a hospital admission is about USD 21 200 (Anand, Kranker, and Chen 2019), and generates 2 DALYs (A. K. Jha et al. 2013). This would suggest a savings-to-cost ratio in the vicinity of 2.5, at just over USD 4 000 per DALY avoided – a decent ROI. Thanh, Baron, and Litvinchuk (2019) examined the impact of the NSQIP on the incidence of SSI and CAUTI in five Canadian hospitals. They found significant reduction in rates and their 49 i.e. not including the central costs of maintaining the registry | 49 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 consequent treatment costs resulting in a savings-to-costs ratio of 4.3, which was subsequently revised to 3.4 in a systematic review (Lee et al. 2019). Woolley et al. (2006) found that a reduction in sepsis following abdominal surgery stemming from information fed back by the Victorian Spleen registry (Australia) came at a cost of USD 18 000 (2017) per life year gained over the lifetime of affected patients. The savings-to-cost ratio of five Australian CQRs was found to range between 2:1 and 7:1, subsequently revised to 1.6 - 5.5 by Lee et al (2019). These studies have the obvious limitation of drawing a causal link between information provided by a registry and the results of safety improvement, which may have been secular or temporary. On the other hand, registries are developed for a range of reasons, whereas the studies focused on specific adverse events. The overall ROI of a registry is therefore likely to be greater if all its intended effects are considered. However, the studies did not include the implementation costs of the efforts to reduce harm. Nevertheless, the results can be used to make a case for the value of

registries, especially the costs of creating and maintaining them are reducing with advances in data analytics, analytics and digital technology (OECD 2019). However, developing, maintaining and adhering to good data management can be expensive. Incident reporting systems, databases containing information on the causes and effects of patient safety incidents, are seen as an important aspect of closing the information loop that can enable learning from harmful incidents as well as near misses. The value of such incident reporting systems is a source of ongoing debate. Carter, Mossialos, and Darzi (2015) explored the costs of the National Reporting and Learning System (NRLS), set up in 2002 to collect information from incident reports across England and Wales. Between 2001 and 2012, the implementation and management of the NRLS was conducted by the National Patient Safety Agency (NPSA) at an average cost of GBP 18.2 million per annum. Since the closure of the NPSA in 2012, average costs have reduced to about GBP 1.1 million (the NRLS is now managed by a NHS trust). This reduction is likely to reflect the transition of the NRLS form establishment to operational phase.50 Nevertheless, these figures reflect only the central costs of managing the database. They exclude the resources needed at the health service level to generate the reports, which vary in complexity and length, and require the time and effort of trained staff. Nor do they capture producing feedback as well as local follow-up on recommendations that the incident reports may produce. Blanchfield, Acharya, and Mort (2018) estimated that the administrative cost of reporting serious reportable events (SREs) to be USD 8 029 per SRE, ranging USD 6 653 for an environmentalrelated SRE to USD 21 276 for a device-related SRE. Care management SREs occurred most frequently, costing an average USD 7 201 per SRE. Surgical SREs, the most expensive on average, cost USD 9 123. Investigation of events accounted for 64.5% of total cost, public reporting for 17.2%, internal reporting for 10.2%, finance and administration for 6.0%; and other costs accounted for 2.1%. The 17.2% incremental cost of public reporting is substantial. While SREs require more resources to report than other events, the incremental value of public reporting must always be assessed against its (opportunity) costs in a resource-constrained environment. 50 This GBP 18 million figure would be inflated by the start-up cost of the NRLS. The annual operating cost would be considerably lower. 50 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 That said, digital technology, automation and other innovations can make reporting more efficient and less burdensome. A useful example is the Sentinel initiative of the United States FDA, which has automated a pharmacovigilance process that previously relied on voluntary reporting (Box 4). Box 4. The Sentinel pharmacovigilance initiative Although a pharmacovigilance scheme, the Sentinel initiative of the United States FDA is a model that could be adopted for improving as well as evaluating patient safety across a health system. The model is an example of efficiently using existing data to build valuable knowledge, while at the same time protecting individual privacy and the rights of data custodians. Sentinel, launched in 2008, accesses personal health data of over 223 million United States residents to monitor the previously unknown adverse effects of approved pharmaceuticals and medical devices in routine clinical use. The data are scattered across a constellation of

health care organisations, payers, providers and agencies. The key feature of this programme is its distributed nature which maintains data security. Custodians maintain full control over their data, which remain behind existing firewalls. At no stage does the Sentinel programme take possession of any data. The distributed system is based on common standards to ensure that all data are formatted to agreed specifications. This enables Sentinel to send electronic queries about the safety of technologies in current use to which the partner returns only the results. Notably, administrative (claims) data form the backbone of the Sentinel system due to their reliability in providing complete longitudinal information on the application and outcomes of biomedical interventions. However, the infrastructure also enables links with EHR and registry data. The initiative has generated important knowledge not discernible from clinical trials, to enable several important regulatory decisions that have prevented considerable harm compared to previous method of mandatory reporting. It has also eliminated the need for expensive postmarketing studies in several products, saving millions of dollars. Source: OECD 2019 An important consideration in establishing an information infrastructure for safety is protecting privacy and ensuring the security of personal health data. These data are highly privacy-sensitive, but also highly valuable to public and private actors. Even if de-identified or anonymised, linkage across different data sets increases the risk of identification. Strong data governance frameworks are needed. These enable personal health data to be used for purposes such as measuring safety and risk, while also ensuring that these data remain secure and individual privacy is protected. Again, such arrangements are not without costs. However, the costs are worth bearing given the benefits of secondary use of data flow many other areas of the health and biomedical ecosystem – for example the discovery of new therapies. Ensuring sufficient nursing capacity is essential Many types of harm, such as pressure ulcers, CLABSI, CAUTI and patients falls, are called nurse sensitive indicators because they mostly depend on nursing practice and care rendered in healthcare facilities. Section 3.2 outlined the value of education in safety at the organisational level, and the need for adequate staffing in healthcare facilities. | 51 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 However, the world is a broader facing nursing and midwifery shortage (WHO 2020), which must be addressed by policy makers. Countries affected by shortages will need to increase funding to educate and employ at least 5.9 million additional nurses. Additional investments in nursing education are estimated to be in the range of USD10 per capita in low- and middle-income countries (see Box 5). Box 5. Costs and benefits of educating nurses and midwifes While nurses and midwives form more than half of the global health workforce, the spending on nursing and midwifery education is around a quarter of the global expenditure on health worker education. According to estimates published in 2010, the average global cost per nursing graduate is USD 50 000, ranging from USD 3 000 in China to over USD 100 000 in North America. The variation can be attributed to the proportional share of the public and private sectors in financing, owning and managing educational institutions, as models for financing nursing education differ both within and between countries

(WHO 2020). Another factor driving variability in the cost of nursing education is the different levels of qualification that coexist and diversity in the duration and prequalification of the education programmes. More and better data on nursing and midwifery graduates, and the cost of education and training, are needed to guide investments to meet the estimated shortages by 2030 (WHO 2020). Investing in nurses and midwives can reduce healthcare costs without compromising health outcomes. For example, quality midwifery care is linked with rapid and sustained reductions in maternal and neonatal mortality and morbidity, reduced interventions in labour, enhanced psycho-social outcomes and increased birth spacing and contraceptive use (Sandall et al. 2016). Nurses to deliver primary healthcare services instead of physicians could lead to similar or better patient health and higher patient satisfaction (Laurant et al. 2018). Evidence from the United Kingdom suggests that healthy women with low risk pregnancies birthing in a midwifery led unit, and multiparous women birthing at home, experience fewer interventions than those planning to birth in an obstetric unit with no impact on perinatal outcomes (Brocklehurst et al. 2012). Expanding midwife-led maternity services for eligible women may offer a means of reducing costs compared to the current leading model of care (Ryan et al. 2013). Further investments would be required to employ nurses upon graduation. In most countries this can be achieved with domestic funds. Actions include review and management of national wage bills and, in some countries, lifting restrictions on the supply of nurses. Where domestic resources are constrained in the medium and long term, for example in low-income countries and conflictaffected or vulnerable contexts, mechanisms such as institutional fund-pooling arrangements can be considered (WHO 2020). Development partners and international financing institutions can help by transferring human capital investments for education, employment, gender, health and skills development into national health workforce strategies for advancing primary health care and achieving universal health coverage. In addition, investment in the nursing workforce can also help drive job creation, gender equity and youth engagement. Incentives play an important part in ensuring safer care Incentives – the behavioural motivations exerted by potential rewards and punishment -- play a central role in any human activity. These can be intrinsic or extrinsic. Intrinsic incentives include the satisfaction for providers when care is executed well and patient improves as expected, or the sadness and disappointment when things do not go to plan. Extrinsic incentives relate to rewards or punishments. Generally, these are thought of as financial rewards but need not be. For example, favourable comparison of one's performance against that of peers is considered an important motivator and a rationale for performance reporting. Financial incentives revolve around the expected remuneration of an action or behaviour versus another. These can be explicit or implicit. Explicit incentives are the basis for pay-for-performance (P4P) schemes in health care, where (typically) a small part of providers' remuneration depends on achievement of agreed measures, which may include metrics on patient harm. P4P can be applied in several ways, as rewards or punishments based on, for example, overall performance, relative performance against

benchmarks, or degree of improvement. P4P schemes to improve safety and quality of care have proliferated in recent years. Implementation is fraught with difficulty given the wide range of endogenous and exogenous factors that contribute to patient outcomes. The size of the incentive, how and who it affects and reaches (individual clinicians, teams, management), how schemes are implemented and what complementary interventions are deployed (e.g. reporting) all play an important role in the success of P4P. Overall, the evidence for the desirable impact of P4P schemes on patient outcomes remains equivocal (Frakt and Jha 2018; Mathes et al. 2019; Mendelson et al. 2017; Papanicolas et al. 2017). The HAC Reduction Program described above appears to be successful in reducing the rates of common adverse events (AHRQ 2019). However, its sister scheme - the Hospital Readmissions Reduction Program also administered by the Centers for Medicare and Medicaid (CMS) as part of its Value-Based Purchasing scheme51 - has been shown to disadvantage hospitals serving higher-risk patients (Roberts et al. 2018). Implicit financial incentives are arguably more powerful as they are baked into the way health systems operate through everyday funding and remuneration. Funding models therefore have powerful implications for a range of outcomes including safety. For example, some countries fund hospital care based on activity and throughput based on classifications such as DiagnosisRelated Grouping (DRGs). This payment model has advantages but is often criticised because payment is contingent on the level of patient complexity, which can include conditions that are acquired during hospital stay. In other words, an adverse event increases patient complexity and can therefore generate a higher payment, acting as a perverse incentive. However, Australian data suggest that this presumption may be false if the overall cost of harm is considered. Duckett and Jorm (2018) demonstrate that in Australian public hospitals, the payment ‘bump’ due to complications of care is lower than the additional cost of the admission during which the complication occurred. In fact, the additional cost of treating complications can 51 https://www.cms.gov/Medicare/Quality-Initiatives-Patient-Assessment-Instruments/Value-Based-Programs/ValueBased-Programs | 53 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 be 2-times greater than the additional revenue they generate. Hospital managers and CFOs may be unaware of this differential. The authors suggest that rather than penalising the occurrence of harm financially, not all of which is avoidable and may also encourage inaccurate coding, the data on ‘lost revenue’ could be provided to hospitals to serve as an incentive to improve safety. Data on harm could instead be collected and reported for comparison and benchmarking. Aligning clinical, corporate and professional risk In broad terms, the adequate management of clinical risk is not compatible with most activitybased or fee-for-service funding models. The consequences of a safety lapse are often latent, and manifest in another part of the health system. A hospital only bears the financial costs of harm during the same admission. Once the patient is discharged, the costs of additional treatment or investigations are often borne by other payers or funding silos. In primary care, a provider may remain unaware when harm occurs if the patient is admitted to hospital or decides to continue care with another

practitioner. In all cases, further additional costs are also borne by patients and the community more broadly, hence the considerable drag on economic prosperity exerted by patient harm outlined in Section 2. Figure 7 revisits the marginal cost functions from an earlier sub-section to illustrate how the aggregate costs of harm extend beyond the local situation and the health system itself. The economically rational decision at local level is to invest in prevention harm ai, where the marginal cost of local prevention intersects with the local cost of failure. This may not necessarily be due to avarice, but simply a lack of awareness of the total cost. Nevertheless, there is currently little financial incentive to invest in the socially optimal level of prevention, located at aii on the horizontal axis, as this incurs a financial loss to the local provider while the benefits flow beyond the local sphere. Correcting this is a major policy challenge. In fact, creating a funding framework that ensures investment in preventing harm reflects, and is aligned with, the cost of harm is the holy grail of patient safety. At the local or organisational level, this means ensuring providers have ‘skin in the game’ (Taleb 2017) when it comes to safety and that the consequences of unsafe care are felt at their origin. At the system level, the total (i.e. the direct and indirect) cost of harm must be considered when making decisions and trade-offs for allocating resources towards safety. 54 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Figure 7. Local costs of unsafe care do not reflect the total costs leading to sub-optimal investment in prevention Source: adapted from Zsifkovits et al (2016). Funding models must be seen as part of improving safety Safety, from a whole-of-system perspective, requires funding models that rewards safe practice, align corporate risk with clinical risk, and create incentives that ensure the cost of harm is borne by the respective provider. This can be difficult in in systems where one patient is treated by multiple providers and services, often for the same condition let alone multi-morbidity. One way to align incentives that draws on intrinsic motivation is to provide information on outcomes beyond the threshold of their care. This was difficult in the days of paper records. With the advent of EHRs it is much easier but only if patient records are integrated into a common data exchange platform. For example, a primary care practitioner can be alerted when one of their patients is admitted to hospital if it is for a condition that can be managed in the community setting. Conversely, a hospital can be alerted if a patient seeks care in the community setting or is re-admitted to a different facility due to a hospital-acquired condition. This need not be linked to financial penalties, merely providing the information can provide an incentive to reflects, assess and correct and problems that may have contributed to the negative outcome. Pooling financial risk is another approach. This can be achieved through novel remuneration models such as bundled payments. Instead of paying each provider involved in the care of a patient for their individual service ‘widget’, remuneration is distributed retrospectively and can be contingent on a set of agreed milestones and outcomes. This approach maintains the interest of all providers in the overall outcome of care, even those at the very beginning of the patient journey. For example, under this model the surgical team performing a joint arthroplasty will be more directly invested in the outcome after 12 months of rehabilitation, as opposed to discharge following the initial stay. Any safety-related problems

will be felt at their origin as well as where they eventually manifest. This can be important for latent harm such as VTE. | 55 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Bundled payments are being implemented in several countries and have had some isolated success in the United States (Liao et al. 2019; Navathe et al. 2018; OECD 2016; Wadhera, Yeh, and Joynt Maddox 2018). They are generally more palatable to providers and payers than block grants or population-based reimbursement, which have advantages but are difficult to administer. Again, such a longitudinal model would have been difficult in the pre-digital era, but improved information infrastructure, data linkage and computer processing make bundling a tangible possibility that should be explored (OECD 2019a). Another promising new financing model is performance-based budgeting. Here performance data, such as risk-adjusted measures of mortality or other health outcomes at the regional or hospital level, indicators related to the process of care, or patient-reported measures can be used to inform budgeting and resource allocation across programs or regions. Allocation need not be punitive but can be targeted at areas where resources may be needed. At this stage, only a few countries explicitly link performance measurement systems and resource allocation, and performance-based budget allocations do generally not represent a significant share of the overall budget. An OECD survey conducted between November 2017 and May 2018 suggests only Chile, Italy, Finland, Lithuania, and Luxembourg reported using data from a national performance monitoring system to adjust budget allocations to devolved health care payers or individual provider organisations. Norway has adopted a performance-based budgeting system to determine budget allocations to its four regional health authorities based on indicators related to health outcomes, health care processes and patient experience (OECD 2019a). In short, incentives – be they implicit, explicit, financial or other – are critical in guiding the behaviour of all actors in health care. Any system-level approach to improve safety must harness incentives that promote behaviours to optimise patient safety. This includes the misalignment between clinical, corporate risk and professional risk – a common feature of health funding models. But it also includes the reporting of data on safety outcomes to providers, patients and the public. While P4P schemes should continue to be tested, the most value is likely to reside in examining underlying financing models in terms of how they incentivise safety and other important policy considerations. Fee-for-service is a useful model for some purposes but contains inherent tensions with safety and other aspects of healthcare quality. Other models that encourage sharing of risk and take a longitudinal view of care should be tested. The advent of more data and digital technology to manage and analyse them makes many of the new approaches more feasible. 3.4 Policy makers must adopt broader system and societal perspectives when thinking about safety This report has suggested that, individually, several specific interventions appear to deliver a very good ROI. Those aimed at the big-ticket items such as infection, VTE, medication errors, pressure injury, falls and care transitions appear to generate the greatest improvement per dollar invested. These events exert a large proportion of the unsafe care burden and are also amenable to improvement. They

represent a low-hanging fruit for health systems looking to maximise value through better outcomes and lower costs. At the local level, within health services and clinical microsystems, it is prudent to assess where the safety problems are and address these based on the available evidence for targeted interventions. Chances are high that nosocomial infection, VTE, and diagnostic or medication 56 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 error exert a significant burden, and present the best opportunity to drive better outcomes using interventions that have been tested, with some adaptation to local needs and consideration of marginal effects as the interventions mature. However, the task for policy makers wishing to generate value through better safety across an entire national health system is more complex. It involves more than picking a set of clinical interventions with the highest ROI and rolling these out across the system without any regard for institutional factors that may enhance or inhibit implementation success. Context matters, and interventions are not deployed in a vacuum. Considerably higher returns may be generated when they are implemented on a platform comprising a good information infrastructure, sound governance, a conducive culture, and consideration of how the incentives baked into the institutions that determine behaviours across a health system influence safety-oriented behaviour. While difficult to pin down empirically, qualitative evidence suggests that these are important organisational and system-level strategies where investment can pay off. The questions then become: how much investment, to what point and where? What is the ideal combination of resourcing across the number of local and system-wide options that will maximise allocative efficiency and value? The economic margin is critical here. Health systems will rarely be allocating resources to safety ‘from scratch’. Decisions must therefore be based around where the next quantum of resources will generate the most return, which will (eventually) begin to diminish the more is invested. A critical decision can often be when to stop investing in one area given the range of programmes and other priorities. This applies to activities that add little marginal benefit and/or exert a high marginal cost, which when defunded will make the fiscal space for more interventions. Investment will ideally balance the costs of prevention with costs of failure, which also change at the margin (Figure 7). Most important, however, is to ensure the total cost of harm is considered, not simply direct costs at local and system level. The optimal level of investment will be achieved when the broader costs – borne by patients and societies – are considered (some estimates of these were provided in section 2) The task becomes even more challenging when the inevitable trade-offs are considered. Maximising efficiency across an entire system inevitably requires value judgements, especially if equity and distributive factors are a policy objective. Interventions to reduce harm target different areas and types of patients: young versus old, or hospital versus community care. Generating the most QALYs, or dollar savings, may mean investing all available resources to reduce infections and VTE in major metropolitan hospitals. The net gains will outweigh the net losses of failing to invest in safety in other settings and targeting other harms. However, not many decision makers would accept this utilitarian approach, which neglects some patient groups and certain geographic locations. In addition to efficiency, most policy makers will want to build

equity into their conception of ‘value’. In short, optimising value through better safety across a system requires a deliberative approach that adopts a system-wide view. This relies on more than selecting the most cost-effective clinical interventions. The broader policy and institutional requirements for their implementation, the total costs of harm, and how benefits are distributed across entire patient populations need to be part of decision making, and consequent implementation and evaluation. | 57 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Conclusion: acting on patient safety needs urgency and leadership Governments of G20 countries and beyond have a legal and moral responsibility to protect the public from harm. A recent manifestation of this requirement are the swift actions in response to the covid-19 pandemic with many countries imposing restrictions on their citizens, directing their health services to respond to the threat immediately, and mobilising huge amounts of resources to mitigate the health and economic impact. Capacity management and rationing steered by governments have affected many aspects of health care systems. They have also challenged, and demonstrated, the importance of preexisting mechanism to assure the safety of patients, health care staff and citizens. Overall, this has certainly confirmed that, in a public health crisis, governments and health systems can respond, and respond quickly. This report has discussed another global public health problem, albeit one that has been unfolding for some time and continues to do so every day, month and year: patient harm. Safety lapses during health care claim well over 3 million lives per year. The global health burden of unsafe care is estimated at 64 million DALYs, on par with road accidents and HIV/AIDS. The economic costs are massive. The direct costs of treating preventable safety lapses approach 10% of total health expenditure. Moreover, patient harm exerts a brake on global growth, potentially reducing global economic output by trillions of dollars per year. While the response to covid-19 has been appropriate given the gravity of the threat (with some observations in Box 5), it provides a stark contrast with action and urgency to prevent patient harm. Box 6. Observations from the response to covid-19 • Strong information infrastructure to help assess real time spread and clinical impact covid-19 inform both prevention measures and resource planning. • Upscaling existing data systems to guide rationing, distribution and use of limited capacities (protective material, tests, ventilators, health care professionals) • A rapid shift to telemedicine, with policy, practice and funding working in concert. • Importance of governance (national/regional) that can overrule the boundaries of public/private care provision and take on integrated care delivery approach. • Various agencies coming together, different government sectors collaborating to build stronger healthcare systems. For example, education system increasing the uptake of highly needed specialties such as nursing. • Updating of regulatory mechanisms in response to emergency situations, and immediate upscaling and substitution of care by setting, professionals and type of 58 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 delivery (respiratory support in home situation monitored virtually by GP, teleconsulting, nurses and physicians with different specialties now recruited to do hospital/ICU work). • Assuring the safety of

materials and practices under time-pressure. • Investments in Responsive R&D and balancing with regulatory frameworks. • Proportionality in addressing risks – managing the spread of covid-19. versus postponement of treatment and consultations of other patients and using existing data-systems to govern addressing needs equally. • Broad and rapid implementation of population-based hygiene measures. At the same time, diverting attention and resources towards managing the impact and spread of covid-19 may increase risk of harm in other areas of health care, especially errors of omission by a system overloaded and distracted by a pandemic. Excess deaths not attributed to covid-19 have risen during the pandemic. For example, England and Wales experienced a spike in non-covidrelated deaths in the last week of March and first week of April 2020, likely to be at least partly for this reason (ONS 2020). These consequent risks of responding to the crisis must also be considered. In the end, it is incumbent on governments to protect the public from harm. This includes harm from unsafe care. More needs to be done given that risks are evolving constantly with the growing complexity of medical care as well as the patient population. While intervention requires mobilising significant resources, these are currently dwarfed by the direct and indirect costs generated by harm. Investing in safety is an excellent value-proposition because it simultaneously improves health outcomes, and reduces costs associated with harm, freeing up resources to be deployed where they will generate additional benefit. Value can be created through considered allocation and investment at three levels of a health system: clinical, organisational and systemic. Specific interventions targeting healthcareassociated infections, VTE and other types of events deliver an exceptionally high return (as high as 7 dollars per dollar invested in some cases), as does better communication across healthcare settings. Digital technologies are emerging as a particularly 'good buy', although their value is heavily contingent on their design and implementation. Cohesive implementation of interventions across the three strata is key as system-wide improvement requires, by definition, systemic behavioural and institutional change. This cannot be achieved with a fragmented approach. Rather, an overarching institutional and policy framework spanning all tiers of a health system is needed as a vehicle to generate greater returns on investment in safety (Figure 8). | 59 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Figure 8. Clinical-organisational- and system-level strategies can deliver ROI and value when implemented in concert Source: Authors Such a framework includes investing in good governance, education (especially in nursing and midwifery expertise), building resilience among key actors including patients and fostering the right organisational culture. It is underpinned by good information systems, and the requisite infrastructure and governance of personal health data. It must include an examination of whether incentives that drive behaviour across systems are conducive to improving safety to optimal levels, where the costs of prevention begin to approximate the costs of failure. Evidence suggests that all health systems fall well short in this regard. Providing an 'off the shelf' package of interventions that would reduce the risk of harm to acceptable levels in any health system is not possible. The ideal mix will depend on several factors unique to a health system's structure and governance, as well as the

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current level of investment in safety and other policy priorities and objectives. The right mix of interventions must be built on good governance and leadership, and a will to make genuine structural changes that enable the more targeted safety interventions to work best. The covid-19 response has shown that decisive action is eminently possible. Time will tell if the momentum is used to apply the same level or urgency and decisiveness to patient safety. - SYSTEM - Governance •Measurement, information & knowledge •Education & training •Align incentives & risk - ORGANISATION - Digital technology •Staffing and organisational culture •Patient enagement, health literacy •Transitions of care - CLINICAL - Infection prevention VTE prophylaxis Falls prevention Pressure ulcer prevention 60 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Abbott, Rebecca A. et al. 2020. “Effectiveness of Pharmacist Home Visits for Individuals at Risk of Medication-Related Problems: A Systematic Review and Meta-Analysis of Randomised Controlled Trials.” BMC Health Services Research. AHRQ. 2019. “AHRQ National Scorecard on Hospital-Acquired Conditions Updated Baseline Rates and Preliminary Results 2014-2017.” Amalberti, René, Yves Auroy, Don Berwick, and Paul Barach. 2005. “Five System Barriers to Achieving Ultrasafe Health Care.” Annals of Internal Medicine. Anand, Priyanka, Keith Kranker, and Arnold Y. Chen. 2019. “Estimating the Hospital Costs of Inpatient Harms.” Health Services Research. Andel, Charles, Stephen L. Davidow, Mark Hollander, and David A. Moreno. 2012. “The Economics of Health Care Quality and Medical Errors.” Journal of health care finance. Andres, Ellie Bostwick, Wei Song, Catherine Mary Schooling, and Janice Mary Johnston. 2019. “The Influence of Hospital Accreditation: A Longitudinal Assessment of Organisational Culture.” BMC Health Services Research 19(1). Arefian, Habibollah, Monique Vogel, Anja Kwetkat, and Michael Hartmann. 2016. “Economic Evaluation of Interventions for Prevention of Hospital Acquired Infections: A Systematic Review.” PLoS ONE. Auraaen, A, R Fujisawa, G de Lagasnerie, and V Paris. 2016. OECD Health Working Papers How OECD Health Systems Define the Range of Good and Services to Be Financed Collectively. Auraaen, Ane, Niek Klazinga, and Luke Slawomirski. 2018. OECD Health Working Papers The Economics of Patient Safety in Primary and Ambulatory Care: Flying Blind. References | 61 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Auraaen, Ane, Kristin Saar, and Niek Klazinga. 2020. “System Governance towards Improved Patient Safety.” (120). https://www.oecd-ilibrary.org/content/paper/2abdd834-en. Avery, A J et al. 2012. “A Pharmacist-Led Information Technology Intervention for Medication Errors (PINCER): A Multicentre, Cluster Randomised, Controlled Trial and CostEffectiveness Analysis.[Erratum Appears in Lancet. 2012 Jun 16;379(9833):2242].” The Lancet. Bacon, O et al. 2020. Making Healthcare Safer III: A Critical Analysis of Existing and Emerging Patient Safety Practices. Rockville. Banger, Alison, and Mark Graber. 2015. Recent Evidence That Health IT Improves Patient Safety. Barakat-Johnson, Michelle et al. 2019. “Costs and Consequences of an Intervention-Based Program to Reduce Hospital-Acquired Pressure Injuries in One Health District in Australia.” Australian Health Review. Begley, S. 1995. “The Establishment and Evaluation of a Domiciliary Pharmacy Service:

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known harm = 0.9% h/exp Known Avoidable admissions (5 conditions) = 4.2% bed days ~ 4% inpatient exp. = 1.2% h/exp Preventable = 0.8% h/exp. ADEs = 0.7-0.9% h/exp Preventable = 0.6% Unknown: Wrong/delayed Dx and treatment (other conditions); Additional non-acute care; Unsafe transition of care ◊ 1x avoidable adm. costs .= 1.2% h/exp Known: PUs = 3% health exp. Preventable PUs = 2% health Exp Hosp. admissions (all) = 6.25% inpt. exp = 1.875% health exp. Preventable admissions = 0.75% health exp. Unknown: malnutrition; costs borne locally (i.e. not resulting in hospital but requiring additional care in-facility) ◊ not included Total as % all health expenditure (h/exp) All harm = 5.4% (All known harm = 4.5%) All preventable harm = 3.6% All harm = 3.3% (All known harm = 2.1%) All preventable harm = 2.2% All harm = 3.875% --- All preventable harm = 2.87% Appendix 1. Assumptions and explanation of direct cost calculations | 75 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Inpatient/acute care Ambulatory / primary care Long-term care Aggregate estimates • All harm: 12.6% of health expenditure • Known harm: 10.5% of health expenditure • Preventable harm: 8.7% of health expenditure Estimates should be considered typical for health systems of developed countries. They are derived from studies predominantly conducted in developed nations most of which are OECD member or partner countries. Variations between individual jurisdictions have not been considered. Converting the denominator from inpatient expenditure to health expenditure was based on the average proportion of all health expenditure devoted to inpatient care in OECD countries of approximately 30%, based on data from the OECD system of health accounts (http://www.oecd.org/els/health-systems/health-data.htm) most recently published in Health at a Glance 2019. The preventability quotient is estimated separately for each AE type and each setting based on existing literature and the authors' judgement. Acute care • Included are harms that extend the length of the hospital admission during which the harm occurred, estimated to be 15% of hospital expenditure on average based on analysis by Slawomirski et al (2017). • Excluded are 1. additional care or investigations in other settings to manage the original hospital-acquired harm, 2. inpatient harms resulting a new diagnosis (de facto triggering a new admission) and 3. harms stemming from transitions of care. The cost of these 'unknown' harms is assumed to be 20% that of the included costs. • It is generally accepted that 50% of adverse events can be prevented. However, preventability and severity of incidents is higher in more costly specialties (Panagioti et al. 2019). As managing these harms will accounts for a greater share of expenditure, it is reasonable to assume that the cost of preventable harms will be greater than 50%. Two thirds (66%) of direct costs in acute care are therefore assumed preventable (i.e. the cost of all harm is reduced by a third to account for preventability). This preventability quotient is applied for known and unknown harm. Ambulatory/primary care • Included are costs of avoidable admission due to wrong/delayed diagnosis and treatment for 5 conditions modelled by Auraaen et al (2018) (heart failure, asthma, diabetes, COPD and hypertension). They account for 4.2% of bed days, but given their lower severity and complexity only 4% of inpatient expenditure. It is assumed

that 75% of these admissions for the 5 conditions are truly avoidable. • Also included are adverse drug events (ADEs), which are said to account for ADEs 2.5% of all health exp. (Sweden), 4% inpatient capacity (UK) and 3.6% hospital admissions (EU) 76 | THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 (Auraaen et al (2018)). A figure of 0.9% of health expenditure is used, of which two thirds are assumed preventable. • Excluded are avoidable admissions for conditions other than the 5 above as well as costs of failure during care transitions between settings. Together these are assumed to be equivalent to the admission costs of the 5 conditions. Long-term care • Included are the costs of pressure ulcers and hospital admission due to unsafe LTC. • Figures for avoidable hospital admissions from LTC facilities are derived from de Bienassis et al 2020. • Wood et al. (2019) reports that healthcare-acquired pressure ulcers are responsible 4% of health exp in the UK. A figure of 3% is used here as a more conservative estimate, and to account for a proportion of these occurring in acute care settings. The mid-range results of studies cited in (de Bienassis et al 2020) on the costs of preventable pressure ulcers is approximately 2% of health expenditure. • Excluded are harms for which the costs are borne within the LTC facility but these are difficult to estimate and have not been accounted for. | 77 THE ECONOMICS OF PATIENT SAFETY FROM ANALYSIS TO ACTION © OECD 2020 Table A2 presents the current and forecast GWP, and what GWP would be, if harm were eliminated based on the estimates discussed in Section 2.4. On average, unsafe care retards global economic growth by 0.73% per year. This would amount to over USD 29 trillion between 2015 and 2024, or about 36% of the 2020 expected global economic output. Table A2. GWP actual/projected and with harm eliminated, 2015-2024 (USD Billions) GWP: actual/projected (USD Billions) % change GWP GWP: harm eliminated (USD Billions) % change (harm eliminated) Difference (USD Billions) 2015 74,799 ... 74,799 ... ... 2016 75,824 1.37% 76,362 2.09% 538 2017 80,262 5.85% 81,406 6.60% 1,144 2018 84,930 5.82% 86,752 6.57% 1,822 2019 86,599 1.97% 89,085 2.69% 2,486 2020^ 82,356 -4.90% 85,321 -4.22% 2,965 2021^ 86,803 5.40% 90,567 6.15% 3,764 2022* 91,405 5.30% 96,046 6.05% 4,641 2023* 96,300 5.36% 101,908 6.10% 5,608 2024* 101,565 5.47% 108,242 6.22% 6,677 860,843 Avg. 3.51% 890,488 Avg. 4.25% 29,645 Notes: ^based on IMF World Economic outlook (June 2020); *annual growth based on pre-covid IMF projections Source data: IMF https://www.imf.org/en/Publications/WEO These numbers should be interpreted with caution. They do not account for preventability of harm and are based on a cost-of-illness study for adult diabetes (Bommer et al. 2017). The study excluded people under 20 and over 79 years of age, which may result in costs being underestimated. While the disease profile of diabetes differs to that of healthcare-associated (iatrogenic) harm, there are also the following parallels: • Both diabetes and iatrogenic harm have a truly global impact -- perhaps more so than other diseases of similar global health burden such as malaria, tuberculosis and HIV/AIDS, which disproportionately affect developing countries. • The risk and impact of both are higher in older adults. • Both account for over 3 million premature deaths a year globally. Appendix 2. Gross World Product (GWP) projections: actual and with patient harm eliminated

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HEALTH ECONOMICS IN COVID-19

INTERNATIONAL MONETARY FUND Pandemic economics P.10 Going the last mile P.17 Measuring the essence of the good life P.32 DECEMBER 2021 Safeguarding the World’s Health and Well-being FINANCE AND DEVELOPMENT Subscribe at www.imfbookstore.org/f&d Read at www.imf.org/fandd Connect at facebook.com/FinanceandDevelopment Contents The COVID-19 crisis has made it clear that pandemic policy is economic 4 policy. 4 Rethinking Multilateralism for a Pandemic Era Incremental changes to existing mechanisms have failed; a fundamental reset is needed Ngozi Okonjo-Iweala, Tharman Shanmugaratnam, and Lawrence H. Summers 10 Pandemic Economics A broad-based economic recovery requires an end to the pandemic Ruchir Agarwal and Gita Gopinath 12 Accelerating Vaccinations Expanded production and more money for research will get shots into arms faster Arthur Baker, Esha Chaudhuri, and Michael Kremer 17 Going the Last Mile Improving sub-Saharan Africa’s logistics could be the key to successful vaccine delivery Eugene Bempong Nyantakyi and Jonathan Munemo 20 Reflections on a Healthy Society Six thinkers explore lessons learned from the pandemic to cultivate a more resilient world Michelle Bachelet, Jeffrey Sachs, K.K. Shailaja, Christian Happi, Kate Soper, and María del Rocío Sáenz 24 Financing Health Systems for the Future We must view universal health coverage as a public policy goal and an investment Tedros Adhanom Ghebreyesus 26 A Life Well Lived Three countries provide lessons for improving health and promoting happiness Analisa R. Bala, Adam Behsudi, and Anna Jaquiery 32 Measuring National Well-Being The search continues for a better gauge of prosperity than GDP alone Daniel Benjamin, Kristen Cooper, Ori Heffetz, and Miles Kimball SAFEGUARDING HEALTH AND WELL-BEING December 2021 | FINANCE & DEVELOPMENT 1 FINANCE & DEVELOPMENT A Quarterly Publication of the International Monetary Fund December 2021 | Volume 58 | Number 4 DEPARTMENTS ALSO IN THIS ISSUE 40 54 37 Listening to Social Silence Anthropology is vital for building back better Gillian Tett 46 Toward Better Pandemic Preparedness Infectious disease outbreaks are inevitable—but we can mitigate their effects by investing in prevention Jay Patel and Devi Sridhar 50 Pandemic Lessons Ruchir Agarwal interviews the Global Fund's Peter Sands on why economists should pay more attention to global health 52 A New Public Health Order for Africa Regional solutions are what we need to get us through the next pandemic John Nkengasong 54 Dementia Storm on the Horizon The rising incidence of dementia around the world calls for global collaboration and decisive financing Nathaniel Counts, Arindam Nandi, Benjamin Seligman, and Daniel Tortorice 58 The African Century The right actions today will ensure that sub-Saharan Africa thrives in a post-COVID world Abebe Aemro Selassie 64 Quantum Computing's Possibilities and Perils Quantum computers could crack the

cryptography that underpins financial stability José Deodoro, Michael Gorbanyov, Majid Malaika, and Tahsin Saadi Sedik 40 People in Economics Data-Driven Chris Wellisz profiles MIT's Amy Finkelstein, who tests economic models with large data sets 44 Picture This The Journey of the COVID-19 Vaccine The development of COVID-19 vaccines has been miraculous, but the path to inoculating the world presents many obstacles Andrew Stanley 62 Back to Basics What Are Global Public Goods? Global institutions must coordinate to preserve the goods that benefit us all Moya Chin 67 Book Reviews Tumultuous Times: Central Banking in an Era of Crisis, Masaaki Shirakawa The Future of Money: How the Digital Revolution Is Transforming Currencies and Finance, Eswar S. Prasad Where Credit Is Due: How Africa's Debt Can Be a Benefit, Not a Burden, Gregory Smith 2 FINANCE & DEVELOPMENT | December 2021 The Real Wealth JUST AS GOOD HEALTH—mental and physical—is fundamental to individual well-being, public health is fundamental to stable, cohesive societies. That is the lesson we must take from the COVID-19 pandemic. The inextricable link between human and economic health is another lesson. The pandemic plunged the world into the deepest economic contraction in generations, slowing progress on education, poverty eradication, and inclusive development. Overcoming the pandemic is a prerequisite to restoring jobs, livelihoods, and economic growth, say the IMF's Gita Gopinath and Ruchir Agarwal. This makes it critical for global economic and financial stability, and therefore of fundamental importance to the IMF. That is why we focus this issue of F&D on global health and well-being. Our authors explore future global health threats and countries' vulnerabilities to them. They examine gaps in health care capacities within nations and the global health security system. And they consider the role of prudent public policy and responsible politics in health care. Ngozi Okonjo-Iweala, Tharman Shanmugaratnam, and Larry Summers call for rethinking international collaboration, with additional investments of at least $15 billion a year to avert future pandemics. Rather than viewing support for global health security as "aid for other nations," they suggest treating it as a strategic investment that benefits every nation—rich or poor. Tedros Adhanom Ghebreyesus underscores the need for public financing to provide universal health care. Michael Kremer and coauthors offer ideas to speed vaccinations in the next pandemic, including investments in manufacturing capacity and supply chains and research in areas with high social value. In a special feature, Miles Kimball and colleagues discuss their development of an index of national well-being to complement GDP. The depth of the pandemic's shock—and the lessons from it—will perhaps spur individual countries and the international community to treat health as a public policy priority that will make for happier and more productive societies. As Mahatma Gandhi said, "Health is the real wealth…" GITA BHATT, editor-in-chief

3 EDITOR'S LETTER ON THE COVER Our December 2021 cover features the original artwork "Heal" by Bahamian artist Ben Ferguson Jr. Inspired by traditional "bush medicine" and the healing properties of nature, Ferguson says he portrayed the mind "in a state of achieving wholeness, healing, and a sense of well-being." INTERNATIONAL MONETARY FUND Pandemic economics P.10 Going the last mile P.17 Measuring the essence of the good life P.32 DECEMBER 2021 Safeguarding the World's Health and Well-being FINANCE AND DEVELOPMENT C1-39_IMF_DEC21_FOB_P4.indd 1 11/11/21 2:55 PM

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It is too fragmented, overly dependent on discretionary bilateral aid, and dangerously underfunded. We must repair the system with urgency. The next pandemic could strike at any time, whether from a deadly influenza strain or another pathogen that jumps from animals to humans. It may even strike while the world continues to struggle with COVID-19. We cannot avoid outbreaks altogether. But we can sharply reduce the risk that they will blow up into pandemics. The world has the scientific and technological capabilities and the financial resources to do so. However, to mobilize these resources, we need a new way of thinking about international cooperation. Rather than financing global health security under the mantle of “aid for other nations,” we must treat it as a strategic investment in global public goods that benefit every nation—rich or poor. The Group of 20 major advanced and developing economies (G20) established a high-level independent panel (HLIP) to conduct a full review of the gaps in global public goods. It was aided by extensive consultation with experts, the global health organizations, and the Global Preparedness Monitoring Board, an independent group established by the World Health Organization (WHO) and World Bank. The gaps the HLIP identified are large. We need a massively scaled-up network of genomic surveillance, integrating national, regional, and global capabilities. Such a network is critical to detecting and instantly sharing information on pathogens that could cause infectious disease outbreaks, identifying their genome sequences, and accelerating the development of medical countermeasures. December 2021 | FINANCE & DEVELOPMENT 7 To plug these key gaps in global public goods, we must invest collectively on a scale much larger than we have been willing to in the past. We must also close long-standing gaps in core healthcare capacities within nations to thwart both emerging and endemic infectious diseases and mitigate comorbidities. These capacities benefit individual nations in normal times but are also critical to pandemic prevention and preparedness globally. They therefore require both domestic and international financing. This, coupled with a broader strengthening of public health systems, will require many developing economies to spend an additional 1 percent of GDP, at least over the next five years. The additional spending must be complemented by enhanced external grant support for investments in lower-income countries that are in the nature of global public goods. Global supply capacity Crucial too is building the global capacity needed to radically speed up supplies of vaccines and other vital materials to avoid prolonging a pandemic and repeating the staggering inequalities of access that COVID-19 has revealed. We need a globally distributed development, manufacturing, and delivery ecosystem that is kept in use in normal times and can pivot swiftly to provide the medical countermeasures specific to each pandemic. In the absence of a larger global supply capacity ready early in a pandemic, producing nations will remain prone to 3 prioritize the needs of their own populations over global needs. The private sector currently has little incentive to invest in this ever-warm supply capacity on the scale required ahead of a pandemic, even if there is scope for dual uses to meet ongoing needs in normal times. We can therefore build the necessary supply ecosystem only through a major public-private investment initiative. That will require a tightly coordinated network of global health organizations and national and regional agencies—such as the Biomedical Advanced Research and Development Authority (BARDA) in the United States, the Health Emergency Preparedness and Response Authority (HERA) in Europe, and the African Vaccine Alliance—collaborating closely with the private sector. Equally, we need clear global rules to keep supply chains open in a pandemic and ensure that export restrictions and trade bottlenecks are tackled quickly. To plug these key gaps in global public goods, we must invest collectively on a scale much larger than we have been willing to in the past. Using the best cost estimates by the WHO, McKinsey & Co., and other sources, the G20 HLIP estimated that the world needs, at an absolute minimum, additional international investments of $15 billion a year

in these global public goods to avoid future pandemics. This is a doubling of current levels, but COVID-19 demonstrates that the costs of a pandemic are several hundred times greater. The expected social returns on these collective investments are immense. However, to succeed in averting the next pandemic, we must strengthen multilateralism. That cannot be achieved with incremental changes to existing mechanisms, which have failed to prevent and respond decisively to the current pandemic. We need major renovation and replenishment of both individual institutions and the global health architecture. The G20 panel has advocated three strategic shifts to enable proper and proactive financing of global health security. First, we must put the finances of the WHO on a more secure multilateral footing and empower it to perform its core roles more effectively. There is no solution to pandemic security that does not involve a reformed and strengthened WHO at its center. HEALTH AND WELL-BEING 8 FINANCE & DEVELOPMENT | December 2021 It plays the lead role in the surveillance of global health emergencies and in identifying gaps in the national core capacities set out in the International Health Regulations. It is also integral to the international coalition of health partners that must develop a globally distributed, end-to-end supply ecosystem for medical countermeasures. Second, we must repurpose the international financial institutions (IFIs) for a new era. The IMF and World Bank were created at the end of World War II to assist countries with economic reconstruction or when they ran into financial difficulties of their own. The World Bank's success led to the establishment of the other regionally based multilateral development banks. Collectively, the IFIs are unique international institutions with the ability to multiply the impact of finance in ways that will be critical in the decades ahead. They leverage the resources of their shareholders in the capital markets, induce domestic funding and policy reforms by governments, and help catalyze private sector investments. Yet the mandates of the Bretton Woods institutions must be updated for an era when the largest challenges facing countries lie in threats to the global commons, even as poverty alleviation and inclusive growth remain critical priorities. The IMF and World Bank must work closely with regional development banks and other international players, including global health organizations, to incentivize lower-income countries and regions to invest in the public goods needed to address these threats. The business models of the World Bank and other multilateral development banks must also pivot toward mitigating risk rather than direct lending, so as to mobilize private capital and transform global savings into development finance. The potential for doing so has long been recognized, given the banks' triple-A credit ratings and scope for using risk guarantees and other credit-enhancement tools and that most developing economies now have access to capital markets to finance infrastructure. However, progress in moving away from a lending-based model has been slow. A bolder move is now required to use their resources more optimally to support investments in global public goods. The IFIs must also play lead roles in international financing of the response to pandemics. The IMF and World Bank have designed programs and streamlined processes during COVID-19 to enable more flexible disbursement of funds. Following the recent $650 billion general allocation of Special Drawing Rights (SDRs) among its members, the IMF is also actively working with wealthier countries to channel excess SDRs to those that are more vulnerable via the Poverty Reduction and Growth Trust, among other ways. However, the whole process for an SDR allocation to be approved, and subsequently deployed to countries most in need, takes time. Several other mechanisms were also developed or enhanced in the midst of the pandemic. The IFIs must now improve and formalize them as part of their crisis-response toolkits so they can deploy resources at a much larger scale and more swiftly when necessary. The shareholders of these key institutions must themselves adapt to the challenges of a new era. They must make timely

replenishments of the grants and capital needed by the IFIs and ensure that the greater focus on global public goods does not come at the expense of spending on education, social protections, and other development priorities. They must also enable the IFIs to put out much more money in a pandemic, much faster and with less elaborate conditions, just as their treasuries and central banks became major lenders and investors of first resort in their own countries. Shareholders should also support a new capital adequacy framework for the multilateral development banks, one that recognizes their preferred creditor status and very low default experience and enables enhanced leverage without compromising their triple-A ratings. Recommendations for doing so were made by an earlier G20 eminent persons group. The recent review initiated by the Italian G20 presidency is an important step in the right direction. Overcoming fragmentation Third, besides strengthening the WHO and repurposing the IFIs, we must establish a new multilateral financing mechanism for global health security. Currently, fundraising for this purpose is fragmented, based on the different mandates of the various global health organizations, and largely dependent on discretionary bilateral and December 2021 | FINANCE & DEVELOPMENT 9 philanthropic aid. The result is a nonsystem of complex, unpredictable, and greatly inadequate funding for global public goods. The G20 HLIP has therefore proposed establishing a multilateral financing mechanism aimed at mobilizing at least $10 billion a year from the international community. It would be most practical for this to take the form of a financial intermediary fund hosted at the World Bank, which would act as trustee. At two-thirds of total additional international financing needed for global health security, the new mechanism would provide a much-needed layer of multilateral support on top of today’s siloed landscape. However, it is critical that resources mobilized for this new financing mechanism add to, and not substitute for, existing official development aid for global public health and other priorities. It should also be designed to catalyze funding from private, philanthropic, and bilateral sources. Importantly too, the new mechanism should not be an implementation agency on the ground. It should instead fund existing institutions and networks and prioritize or reprioritize allocations across the system based on the most pressing needs of the time. This will enable it to serve as an integrator rather than become a new silo that only furthers fragmentation. Funding for this multilateral mechanism should be based on pre-agreed contributions from all countries, similar to the way nations periodically provide fresh funds to the International Development Association. When spread across a large number of countries on a fair and equitable basis, the contributions translate to barely 0.02 percent of the GDP of most countries, or less than 0.1 percent of annual government budgets. This is entirely affordable. Greater and more sustained funding also requires better governance. Governance of global health itself rests with the WHO and its decision-making body, the World Health Assembly. What is missing is a mechanism that brings finance and health decision-makers together to govern and mobilize funding of global health security. We believe that a board that brings health and finance ministers together within an inclusive G20-plus group will fill that need most effectively. It should have adequate representation from developing economies, especially the inclusion of the African Union. The WHO, World Bank, IMF, and World Trade Organization should be included in an ex officio capacity. A permanent, independent secretariat hosted by the WHO and drawing on the expert resources of the major international organizations should support the board. Narrow window Rethinking multilateralism has never been more urgent. The window for action is narrow. As the experience of earlier crises shows, the impetus to make bold change will fade once we are past the worst of the pandemic in the richest countries. We must also act urgently to repair the deep and growing distrust of the global system in developing regions that have had little access to lifesaving supplies. Failure to reverse this trust deficit will have lasting consequences. It will

make it very difficult to address climate change, future pandemics, and other problems in a dangerous world. The Joint Finance-Health Task Force initiated by G20 Leaders on October 31, 2021, should be the first step toward establishing the new multilateral financing mechanism and the board required for effective coordination and stewardship of funding for global health security. The task force should seek to bridge differences pragmatically and achieve consensus by early 2022. The collective actions we propose are critical to future human security everywhere. They will also help avert the much larger costs that nations will incur in future global health crises. It would be both economically and politically myopic, and morally indefensible, to wait for the next pandemic to overwhelm us. NGOZI OKONJO-IWEALA is director-general of the World Trade Organization. THARMAN SHANMUGARATNAM is senior minister in Singapore and chair of the Group of Thirty. LAWRENCE H. SUMMERS is the Charles W. Eliot University Professor at Harvard University and a former US Treasury secretary. They cochaired the G20's High Level Independent Panel on Financing the Global Commons for Pandemic Preparedness and Response. HEALTH AND WELL-BEING Rethinking multilateralism has never been more urgent. The window for action is narrow. 10 FINANCE & DEVELOPMENT | December 2021 ART: ISTOCK / YAMONSTRO; DWAYNE SENIOR/BLOOMBERG VIA GETTY IMAGES A broad-based economic recovery requires an end to the pandemic Ruchir Agarwal and Gita Gopinath L ast May, the IMF released a detailed and comprehensive road map to end the COVID-19 pandemic, save lives, and put the world back on track toward a broad-based economic recovery ("A Proposal to End the COVID-19 Pandemic," Agarwal and Gopinath, 2021). The road map was endorsed by multilateral institutions and key stakeholders. It was based on a simple, yet powerful premise: Ending the pandemic is a necessary prerequisite to restoring jobs, livelihoods, and economic well-being. One cannot be achieved without the other. How has the world fared since the release of the road map? The global recovery has continued, but momentum has weakened. In six months, the officially recorded global COVID-19 death toll has risen by about 50 percent and is now over 5 million, and the actual death toll is estimated to be several times higher. Of particular concern is the growing divergence in economic prospects between rich and poor nations. In the October 2021 World Economic Outlook, the IMF projected that aggregate output for advanced economies would regain its pre-pandemic trend path in 2022 and exceed it by 0.9 percent in 2024. By contrast, output for emerging market and developing economies, excluding China, is expected to remain 5.5 percent below the pre-pandemic forecast in 2024. This divergence in economic prospects is a consequence of wide disparities in vaccination rates (which we call "the great vaccine divide") and policy support. As of the end of October, among advanced People wait in line for a COVID-19 vaccination in Cape Town, South Africa. Pandemic Economics economies, about 65 percent of the population was fully vaccinated, and booster shots were available in many of them. By contrast, the vaccination rate was less than 2 percent among low-income countries. This is not just a problem for particular countries or regions, it is a global problem. As public health officials have stressed repeatedly, the pandemic is not over anywhere until it is over everywhere. Further unchecked transmission makes the emergence of new variants—including some that are resistant to existing vaccines—more likely, possibly putting the world back at the starting line in the race against the virus. If COVID-19 were to have a prolonged impact, we could see global GDP losses rise to $5.3 trillion over five years relative to our current projection, with several million more lives lost. Action plan Our road map identified three broad targets and actions needed to meet those targets, as well as financing needs for each action. The targets: vaccinating at least 40 percent of the population in all countries by the end of 2021 and 70 percent by the first half of 2022; tracking and insuring against

downside risks (due to the rise of new variants or supply-chain problems); and saving lives by ensuring widespread access to tests, treatments, personal protective equipment, and other critical health tools. Progress toward the key actions needed to achieve those targets has been mixed, and we are still behind. As of the end of October, some 75 to 80 nations, mostly in Africa, were not on track to meet the end-2021 40 percent vaccination target. Fifty-five of these countries will likely have problems primarily with supply, whereas 24 will have both supply and absorption-capacity issues. Our plan recommends the following near-term actions to end the pandemic and support a broad-based economic recovery. • Immediately closing the 550 million dose gap to achieve 40 percent coverage by accelerating existing dose donations to the COVID-19 Vaccines Global Access (COVAX) facility, an initiative aimed at equitable distribution of vaccines, and pledging new donations; executing dose swaps with COVAX and the African Union (that is, deferring the delivery of doses intended for Group of Twenty [G20] countries to allow developing economies to move up in the queue); and eliminating restrictions on exports of vaccines and critical inputs. • Committing to financing the new ACT-Accelerator budget of about $23 billion to ensure that all countries can access the necessary volume of vaccines, tests, treatments, and personal protective equipment. (The ACT-Accelerator is a partnership of the world's international health organizations to fight COVID-19.) • Maintaining collective accountability of progress against the targets through frequent engagement between Group of Seven advanced economies, the broader G20, and other key stakeholders. Beyond the near term, it will be important to expand regional manufacturing capacity of vaccines in developing economies and monitor risks. Better stewardship After nearly two years of the deadliest and most economically devastating pandemic in a century, what are the initial lessons we have learned? First, the COVID-19 crisis has made it clear that pandemic policy is economic policy, that there is no durable end to the economic crisis without an end to the health crisis. Ending the pandemic is therefore critical for global macroeconomic and financial stability, which makes it of fundamental importance to the IMF and other economic institutions. Indeed, the IMF's projections and policy recommendations for the global economy rely crucially on the relative success of the race against the virus. Systemic risks posed by future pandemics and global health concerns should be more explicitly accounted for in economic analysis and surveillance. Second, the world needs better stewardship of global public goods, including preparedness to fight future pandemics. This will require much greater coordination and collective action than we have managed to summon so far. The G20 High Level Independent Panel's report on pandemic preparedness provides several concrete steps in this regard (see "Rethinking Multilateralism for a Pandemic Era," this issue). We are all in this fight together, and collectively we can and must do better to fight the problems facing the planet. RUCHIR AGARWAL is a senior economist in the IMF's Research Department and GITA GOPINATH is the IMF's chief economist. HEALTH AND WELL-BEING ART: ISTOCK / SORBETTO Expanded production and more money for research will get shots into arms faster Arthur Baker, Esha Chaudhuri, and Michael Kremer Accelerating Vaccinations Vaccines for COVID-19 were developed and produced at unprecedented speed. Yet more than nine months after multiple vaccines were shown to be safe and effective, less than half of the world's population and only 8 percent of people in Africa have received a shot. Such delays in vaccination during a pandemic are extremely costly in both human and economic terms. Each month in 2020 and early 2021 COVID-19 killed about 300,000 people; it is expected to reduce global GDP by $12 trillion in 2020 and 2021, according to IMF projections, which works out to roughly $500 billion a month. More comprehensive estimates of harm,

including losses from interrupted investments in health and education, are many times larger (Cutler and Summers 2020). Vaccination is arguably the most effective way to limit not only the toll on human life and health but also the economic and social harm of a pandemic. This is why getting people vaccinated quickly is so important. Governments and international organizations could take several steps to accelerate global vaccination during future pandemics, promote more equitable and efficient distribution, and reduce incentives for export bans and hoarding. Two particularly important steps are advancing investments in vaccine manufacturing capacity and supply chains and financing for areas of research for which social needs greatly exceed existing commercial incentives. Risky and time-consuming Two characteristics of vaccine production are particularly important for understanding pandemic preparedness policy. First, development is risky and time-consuming. The chance of success for any particular vaccine candidate is usually low. Early in the pandemic, we estimated that 15 to 20 candidates would be needed to yield roughly an 80 percent chance of at least one success, based on historical data. Until 2020, vaccines took years to develop and longer still to produce on a large scale. Even with the urgency of a global pandemic, as late as October 2020 many experts thought we would wait until late 2021 for a vaccine to be approved and estimated that the world would produce just 115 million doses by the end of the year (CGD 2020). As it turned out, unusually large investments by countries including the United States and United Kingdom helped accelerate the development of multiple highly effective COVID-19 vaccines. The world was also lucky that vaccines for COVID-19 were easier to develop than those for diseases such as malaria or AIDS. Even when vaccine formulation proceeds much faster than expected, clinical trials take months. Second, finished production facilities are generally highly specialized for a particular vaccine, and each facility requires regulatory approval. It takes time to repurpose facilities, even during an emergency (about six months during COVID-19). Before a pandemic hits, it makes sense to install a large amount of vaccine manufacturing capacity, so that the world population can be served quickly; to install capacity in parallel with clinical trials so that vaccination can begin as soon as a candidate is approved; and to install enough for multiple vaccine candidates, because we cannot know beforehand which will work, and repurposing capacity takes time. During the COVID-19 pandemic, many firms and governments aimed to expand capacity, often by repurposing existing factories, which is faster than building from scratch. However, production was constrained both by a shortage of capacity available to repurpose and by shortages of generic inputs such as glass vials, lipid particles, and bioreactor bags. This not only slowed vaccination but also led to concerns that by expanding capacity, rich countries were monopolizing limited supplies of inputs and capacity that could be repurposed. Installing standby production capacity and stockpiling inputs in advance of a future pandemic would address this problem. How much manufacturing capacity is needed? It makes sense to install and maintain enough to Vaccination is arguably the most effective way to limit not only the toll on human life and health but also the economic and social harm of a pandemic. 14 FINANCE & DEVELOPMENT | December 2021 vaccinate the world with each of several vaccine candidates, since we don't know in advance which will succeed. This would cost billions of dollars (Kazaz, Webster, and Yadav 2021), but given the IMF's estimate of COVID-19's economic cost, expected returns would be high even with a moderate risk of future pandemics. Social versus private value The private sector won't do this alone, however. Installing and maintaining spare capacity is expensive. During a future pandemic, as with COVID-19, manufacturers will anticipate that political and social constraints on pricing will reduce their returns. The social value of additional capacity is therefore much greater than the private value to companies. We estimate that the marginal social

value of existing COVID-19 vaccine capacity in early 2021 was $500 to $1,000 per course, compared with $6 to $40 per course in current contracts (Castillo and others 2021). Governments should therefore offer incentives to install extra capacity and stockpile inputs. For example, Operation Warp Speed in the United States and the Vaccine Taskforce in the United Kingdom paid companies to install manufacturing capacity while clinical trials for COVID-19 vaccines were still underway. These programs paid for themselves many times over: COVID-19 cost the US economy an estimated $26 billion a day in 2020 and 2021 (Cutler and Summers 2020). The implication is that Operation Warp Speed, which had spent just $13 billion as of December 2020, will pay for itself if it cuts the duration of the pandemic by just 12 hours. More early investments in manufacturing capacity would have had even larger benefits (Castillo and others 2021). Governments can do this at a much greater scale and further in advance to prepare for future pandemics. Standby capacity for future pandemics could also serve current needs, and facilities could be designed so as to be repurposed for different vaccine candidates. In a well-designed global procurement process for standby capacity, criteria for the selection of contracts would include factors such as ease of repurposing in addition to cost. However, it would be penny-wise and pound-foolish to assume in advance that this can be done on the cheap. Vaccine nationalism Stockpiling inputs and installing capacity in advance will also help reduce the risk of vaccine nationalism—export bans and hoarding of critical supplies that endanger the trading system most of the globe relies on for access to medical technology. During a pandemic, price controls create shortages, and shortages in turn create strong incentives for elected governments to deliver successful vaccines to the domestic constituents to whom they are ultimately accountable rather than make them available to other countries. This is not just theory. During the COVID-19 pandemic, both the United States and India, the world's largest vaccine producers, restricted exports of vaccines or inputs in 2020 and 2021. Some EU countries restricted exports of surgical masks even to other EU members, and the United States was accused of seizing shipments bound for its allies. When the global shortage of masks ended, international tensions quickly faded. Moral suasion alone is unlikely to prevent vaccine nationalism. In the language of game theory, changing national governments' behavior in pandemics will require changing the game they are playing by altering the global stock of vaccine capacity. Vaccinating the world in a few months would significantly weaken governments' incentives for hoarding and restricting exports. Even if countries vaccinated their own populations first, delays for the rest of the world would be much shorter. Freeing up trade by addressing shortages also has benefits for global efficiency and security. Few countries or even regions will be able to install large-scale capacity for a variety of vaccine platforms because 3 different regions specialize in different platforms (any of which could fail), and supply chains are global. Unfettering trade will give countries the confidence to invest in standby capacity for a range of technologies, broadening the world's portfolio of vaccine candidates. Supply capacity Both national and multilateral investments in supply chain and vaccine capacity and stockpiles should be welcomed. During COVID-19 there was uncertainty about whether investments by one country to expand vaccine capacity would December 2021 | FINANCE & DEVELOPMENT 15 Nobody knows which countries will be worst affected during a future pandemic, so it makes sense to agree to prioritize supplies for the hardest-hit countries and populations in advance. have positive or negative effects on other countries. On one hand, these investments increase the global supply. On the other hand, if the supply of inputs cannot be adjusted quickly enough to meet new demand at existing prices, investments by one country may raise prices for other countries. However, in the long run we should be able to build as much capacity as we need, meaning we can significantly increase demand for capacity without a substantial increase in the per-unit price. So investments by one

country to prepare for future pandemics will not impede access for others. In fact, since most new disease outbreaks (such as Ebola or Zika) strike only particular regions, countries that are not affected might make their capacity available to others during emergencies. At the same time, pooled investments through multilateral organizations could allow countries to take advantage of ignorance about future pandemics. Nobody knows which countries will be worst affected during a future pandemic, so it makes sense to agree to prioritize supplies for the hardest-hit countries and populations in advance, substantially increasing security for all countries for any given level of capacity investment. Despite vaccines being approved in December 2020, many countries do not expect to have fully vaccinated the majority of their populations until at least early 2022. In the future, we can avoid such a disastrous delay by investing strategically in advance. Financing research More financing for research is another urgent need. Commercial investment in certain areas of research and development of vaccines against potential pandemic pathogens is far too low to satisfy the social need, making public funding a priority. One such area is research on options for using existing vaccine supplies more efficiently, known as “dose stretching”. The traditional research and development process is designed to optimize health benefits for the individual receiving the vaccine through the right balance between the efficacy of larger doses and their greater side effects. That balance may change during a vaccine shortage, when supply is also a public health issue. Moving to lower doses, increasing the intervals between doses, or using mix-and-match strategies could substantially accelerate vaccination, saving more lives. Take the example of fractional dosing for COVID-19. Data from early clinical trials on the immune responses produced by lower doses of some vaccines, combined with evidence of a high correlation between certain types of immune response and vaccine efficacy, suggest that half or even quarter doses of some vaccines could be highly effective, particularly against severe disease and death (Więcek and others 2021). Using lower doses could have expanded vaccine supply by up to 1.5 billion doses a month in the second half of 2021 as well as potentially reducing side effects and thus vaccine hesitancy. Yet despite shortages, the high expected value of testing, and promising clinical trial data available since late 2020, no clinical trials of efficacy and very few further studies of immune response to fractional doses had been conducted as of late 2021 (Więcek and others 2021). The costs of further testing to optimize dosage are much lower than the expected public health and economic benefits. So in the future, studies to ascertain the optimal dosing regimen and evaluate mix-and-match vaccine doses should take place in parallel with standard clinical trials. The optimal dosing regimen may also change as new variants emerge and the demographics of the unvaccinated population shift. For COVID-19, booster shots are one example of how vaccination regimens can change in response to an evolving pandemic situation. Overall public health benefits, not just individual-level efficacy, should be considered in these decisions. Governments can subsidize more research with potentially significant social benefits when private

incentives are insufficient. Dose optimization is just one example; there are many research questions that could have had huge social benefits but were not pursued. Since much of the evidence on such questions is a global public good, even national governments will not invest the optimal amount, suggesting a role for global institutions to invest in research with high social value. For example, the Coalition for Epidemic Preparedness Innovations recently issued a call for proposals for research on fractional dosing for booster shots of COVID-19

vaccines. Current research and regulatory processes were not designed for pandemic situations, and it is worth considering how they could be updated to accelerate vaccine development and availability for future pandemics. Measures could include establishing scientific and ethical infrastructure to rapidly assess whether human challenge trials are appropriate; releasing preliminary data from early clinical trials to inform manufacturing capacity allocation decisions; establishing international licensing standards; and expediting the emergency use authorization process. ARTHUR BAKER is the associate director for research and planning at the Development Innovation Lab at the University of Chicago, where ESHA CHAUDHURI is a research specialist. MICHAEL KREMER is a university professor in the Kenneth C. Griffin Department of Economics at the University of Chicago, faculty director of the Development Innovation Lab, and a 2019 Nobel laureate. References: Castillo, Juan Camilo, Amrita Ahuja, Susan Athey, Arthur Baker, Eric Budish, Tasneem Chipty, Rachel Glennerster, and others. 2021. "Market Design to Accelerate COVID-19 Vaccine Supply." Science 371 (6534): 1107–9. Center for Global Development (CGD). 2020. "COVID-19 Vaccine Predictions: Using Mathematical Modelling and Expert Opinions to Estimate Timelines and Probabilities of Success of COVID-19 vaccines." Policy Paper 183, Washington, DC. Cutler, David M., and Lawrence H. Summers. 2020. "The COVID-19 Pandemic and the $16 Trillion Virus." JAMA 324 (15): 1495-6. Kazaz, Burak, Scott Webster, and Prashant Yadav. 2021. "Incentivizing COVID-19 Vaccine Developers to Expand Manufacturing Capacity." CGD Notes, March 26, Center for Global Development, Washington, DC. Więcek, Witold, Amrita Ahuja, Esha Chaudhuri, Michael Kremer, Alexander Simoes Gomes, Christopher M. Snyder, Alex Tabarrok, and Brandon Joel Tan. 2021. "Testing Fractional Doses of COVID-19 Vaccines." Currently under review. Sub-Saharan Africa still has too few vaccines for too few people. Delivering more inoculations to the region deserves top priority in the effort to stamp out new variants that could further derail a global recovery. However, policymakers and the international community will likely have one other hurdle to overcome to successfully deploy vaccines: the region's poor trade and logistics quality. No journey is more critical to determining the fate of a pandemic than the distance a vaccine must travel from the production line to a person's arm. In sub-Saharan Africa, the last mile of this important race is all-important. Data from the World Bank's Logistics Performance Index (LPI) Database—a good proxy for transport and distribution logistics—show that Africa's LPI score is only about 2.5 on average. The score ranges from 1 to 5, with higher scores representing better performance on logistics—the network of services that support the physical movement of goods both within and across a country's borders. The region's score trails all major regions of the world in six key categories of logistics performance, including timeliness and tracking. For more than a decade, its negative impact on the region's trade has been well documented. For instance, delays at customs are estimated to add 10 percent Improving sub-Saharan Africa's logistics could be the key to successful vaccine delivery Eugene Bempong Nyantakyi and Jonathan Munemo **ART: ISTOCK / Z_WEI Going the LAST MILE   Source: Share of people fully vaccinated is from Our World in Data (https://ourworldindata.org/coronavirus#coronavirus-country-proles).**

Logistics Performance Index data are from World Bank, World Development Indicators. Note: Countries that have destroyed or given away vaccines because they were unable to administer them fast enough are indicated in dark blue. Data

labels use International Organization for Standardization (ISO) country codes. Cause and effect Countries with poorer logistics performance generally have lower vaccination rates. (percent of population fully vaccinated) Nyantakyi , 10/7 ZWE GNQ COM RWA ZAF GMB AGO GIN SEN GAB NER SLECAF LBR SOM LSO MRT SDN MDG TGO COG ZMB MWI GHA NGA UGA MLI KEN CMR BEN CIV COD BFA TCD GNB 2.0 2.2 2.4 2.6 2.8 3.0 3.2 3.4 3.6 Logistics Performance Index (scale of 1 to 5) 14 12 10 8 6 4 2 0 to the cost of imported goods, which is higher than the average impact of tariffs in some cases. But it is also now becoming clear just how much poor transport logistics could derail already slow attempts to vaccinate the region's population and do so quickly. Once fully thawed, some vaccines have a short shelf life. This raises the risk of destroying perfectly good doses when the region's logistics challenges are factored in. Looking closer at the reasons cited for vaccine destruction, the common thread is poor logistics and transport infrastructure. In Malawi, for instance, health authorities cited the short time between delivery and expiration of vaccines and the need to reduce hesitancy as the rationale for incinerating close to 20,000 doses of AstraZeneca vaccine. Addressing vaccine hesitancy is critical to a successful mass vaccination campaign, and overcoming logistics challenges plays a large role. Skeptical individuals have little incentive to get a jab if they must travel miles and spend hours to reach the nearest vaccination centers—often lacking confidence that temporary health workers will themselves show up. Places that are poorly connected by road also tend to have limited access to information and telecommunications technology, making access to official information about vaccines difficult. In addition, while bringing vaccine manufacturing closer to Africa to speed up supply is important for building capacity in the region, it matters less in the short term whether vaccines are shipped from Germany or South Africa to, say, the Democratic Republic of the Congo if, at the last mile, the distribution chain is broken by gaps in transport and logistics. Before vaccines were deployed globally, a World Health Organization (WHO) assessment conducted to gauge global COVID-19 inoculation readiness showed that Africa has an average preparedness score of 33 percent for the COVID-19 vaccination program, far below the desired benchmark of 80 percent in key areas, including logistics quality and performance. Emerging data appear to confirm that logistics performance quality is positively correlated with the COVID-19 vaccination rate across Africa (see chart). In this regard, it is interesting to compare vaccination rates of countries with a relatively low LPI (such as the Democratic Republic of the Congo) with those that have a relatively higher LPI (such as South Africa). The Democratic Republic of the Congo's low LPI score of 2.43 reflects its problem with a very poor transport network. This has made the delivery of vaccines to remote areas difficult and in part explains why close to zero percent of the population is fully vaccinated. In addition, the Democratic Republic of the Congo and the other landlocked African countries are naturally challenged by geography and economies of scale when it comes to connecting to global supply chains. This has led to logistics-induced delays in transportation and distribution, leaving Malawi, South Sudan, and the Democratic Republic of the Congo unable to deploy and administer vaccines on short notice. In contrast, South Africa, with a score of 3.38, stands out as the top performer, thanks to its large economy (which allows for economies of scale in supply chain connections), superior and much wider network of health services, access to the sea, and proximity to major transportation hubs. On the December 2021 | FINANCE & DEVELOPMENT 19 other hand, Zimbabwe, Equatorial Guinea, and Comoros have relatively better vaccination rates but lower LPI scores, suggesting that other factors contribute to the uptake of vaccines in Africa. For instance, when authorities in Zimbabwe announced that those who refuse COVID-19 vaccines could be denied public sector jobs and services, the vaccination rate increased significantly in big cities.

It made Zimbabwe one of the African countries with the highest vaccination rates in spite of its poor logistics performance. Covering the last mile After addressing the issue of vaccine supply, closing gaps in logistics performance that persist across the continent is critical to altering the current course of the pandemic in Africa. In the short term, measures to substantially increase vaccine delivery and uptake are essential. The good news is that useful lessons can be found within the region. For example, when Côte d'Ivoire started its vaccination drive, centers equipped to vaccinate 300 people a day were struggling to inoculate 20 a day. Then the government adopted innovative means to overcome the last-mile challenge. It deployed mobile clinics and medical buses that traveled to the busiest areas to vaccinate people, albeit at a significant cost. There are now fixed or mobile vaccination centers across 113 districts, and nearly all are operating close to capacity. Ghana has done the same. This could be replicated across the region in the short term with support from development agencies. The region can also leverage digital platforms for registration and information about vaccine availability—drawing lessons from South Africa. A new e-appointment system allows citizens to schedule their own COVID-19 vaccination appointments at a convenient time and at a center close by. This is expected to increase the vaccination rate by reducing commuting distance and allowing families to schedule appointments together. Vaccine campaigns should target large cities and densely populated areas where transmission risks are more significant and disruption to economic activities is severe in the event of a mass lockdown. In the medium term, it is critical to develop the infrastructure inputs to the supply chain that affect logistics performance, particularly in cold-chain capacity. The COVID-19 vaccine requires special treatment and handling in transit and when being administered. The AstraZeneca vaccine can be stored safely in refrigerated conditions for up to six months. Both the Pfizer and Moderna vaccines require temperatures of –20 degrees Celsius or less. It is therefore quite concerning that a WHO survey of 34 countries found widespread gaps in cold-chain refrigeration capacity in Africa. About 30 percent of countries surveyed have gaps in cold-chain refrigeration capacity in more than half of their districts. Only 28 percent of health facilities in sub-Saharan Africa are estimated to have access to a reliable power supply. This presents logistical hurdles in storing vaccines in most districts. Addressing these structural issues should be a development priority in the medium term. Poor-quality transport and distribution logistics stifle trade and competitiveness and, as is now apparent, will also be a major impediment to pandemic vaccination once the current supply constraints are resolved. The COVID-19 crisis presents Africa with an opportunity to leverage financial assistance from the IMF and other multilateral institutions for investment in infrastructure and trade facilitation measures that support strong logistics performance. These investments will also improve trade and competitiveness and strengthen health systems to deal with current and future shocks. EUGENE BEMPONG NYANTAKYI is chief research economist at the African Development Bank. JONATHAN MUNEMO is a professor of economics at the Perdue School of Business at Salisbury University, Maryland. In the short term, measures to substantially increase vaccine delivery and uptake are essential. HEALTH AND WELL-BEING 20 FINANCE & DEVELOPMENT | December 2021 Six thinkers explore lessons learned from the pandemic to cultivate a more resilient world Michelle Bachelet Leave no one behind is not just a mantra, it is a necessity. The pandemic has exposed and exacerbated inequalities within and between states and demonstrated the huge costs to people and prosperity of leaving those gaps unaddressed. Yet, due in significant part to short-sighted vaccine policies, we are faced with deepening economic hardship in the developing world, while richer countries welcome signs of an economic recovery. To recover better, we need an economy that puts human beings and rights at the center of economic policy. One that invests in health, social protection, and other human rights to curb

inequalities and discrimination; embraces progressive taxation, labor rights, and decent work; and promotes meaningful public participation and civic spaces. This human-rights-based approach to the economy is an essential lever to relaunch and accelerate our path toward realizing the United Nations 2030 Agenda for Sustainable Development. MICHELLE BACHELET is the United Nations high commissioner for human rights. Reflections on a Healthy Society December 2021 | FINANCE & DEVELOPMENT 21 ART: JOHN JAY CABUAY Jeffrey Sachs The basic lessons of happiness are these: society (and therefore government policies) should attend to people's economic needs, physical health, mental health, social connections, sense of purpose, and confidence in government. The pandemic has threatened almost every dimension of well-being and indeed has fostered rising anxieties, clinical depression, social isolation, and in many places, a loss of confidence in government. We need more government outlays in response to the pandemic and its aftermath, but this poses two challenges: first, poor countries cannot afford to increase the provision of public services, so they urgently need access to incremental financing and debt relief on adequate terms. Second, governments need much more professionalism and competence than many (perhaps most) have displayed in response to the pandemic during the past two years. Aristotle wrote two books as a pair: Nicomachean Ethics and Politics. Nicomachean Ethics is mainly about personal virtues and the household and friends, while Politics is about civic life, public education, and sociality at the scale of the polis (the city-state). Virtuous citizens lead to a virtuous state, while a virtuous state (and government) promotes virtues in the population. And the virtues—wisdom, justice, moderation, honesty—are all supportive of a good life. JEFFREY SACHS is the director of the Center for Sustainable Development at Columbia University. K. K. Shailaja The worst crisis of the century has underscored the need to reassess existing health systems and formulate an effective and socially equitable strategy to combat health crises in the future. It is imperative that governments continue to strengthen their public health systems and augment the capacity to treat more infections. Protecting the physical and mental health of frontline workers should be given priority. At times of crisis, it is equally vital to galvanize the trust of the community through engagement and transparency in dissemination of information. The right to health and protection of human rights in providing care should be upheld for one and all. An inclusive response to the pandemic must be aligned with the United Nations 2030 Agenda for Sustainable Development in order to ensure that no one is left behind. The emergence and reemergence of new and old diseases and the public health aftereffects of natural disasters are unavoidable. Health policymakers should monitor and maintain a well-functioning disease surveillance system informed by the application of principles of epidemiology to help reduce the impact of future diseases and outbreaks. This proactive approach should be further complemented by preventive health care services, along with health workforce education and training in disease surveillance and public health actions. 22 FINANCE & DEVELOPMENT | December 2021 An integrated and collaborative One Health method needs to be promoted to share scientific and research data to tackle emerging challenges in global health and to attain optimal health for people, animals, and our environment. K. K. SHAILAJA is the former health minister of Kerala, India. Christian Happi The world was not prepared to respond to the emergence of a new and deadly pathogen. With pathogens, we need to start playing offense and stop playing defense. Preventive measures must be put in place to ensure the health and wellness of citizens. This will require crucial investments in novel genomic tools and technologies for surveillance and real-time data capture and sharing. Fortunately, we have seen the establishment of new health and wellness initiatives by private philanthropies, governments, and global health organizations, especially in the field of public health and outbreak

preparedness. Examples of these initiatives include the World Health Organization's Hub for Pandemic and Epidemic Intelligence and an early warning system program called SENTINEL that is being co-led by the African Center of Excellence for Genomics of Infectious Disease at Nigeria's Redeemer's University and the Broad Institute of Harvard and MIT. The pandemic has also highlighted the importance of investing in basic and translational scientific research on infectious diseases, especially in Africa. Most pandemic-potential pathogens are found in Africa, which means that the continent could lead the world in the development of countermeasures and tools for preventing, detecting, and responding to outbreaks. But this has not been an investment priority for African leaders. As an example, if African countries had previously invested in vaccine research and development, they would not be waiting for vaccine donations. Many countries on the continent also lack the local production capacity for biotechnology and the manufacture of medical supplies, drugs, and vaccines. This makes the continent vulnerable. Thankfully, we are seeing a renewed urgency toward investments in these sectors. CHRISTIAN HAPPI is a professor of molecular biology and genomics and the director of the African Center of Excellence for Genomics of Infectious Diseases. Kate Soper The pandemic has added to global inequalities— in 2020, it pushed 124 million more people into poverty—and revealed the topsy-turvy nature of an economy that undervalues its most essential workers while massively rewarding its financial elite. It has also shown how environmental misuse is implicated in lifestyle illness and the spread of pandemic disease. At the same time, the lockdown experience shed light on the benefits to health and well-being of adopting slower-paced and less acquisitive ways of living, and it allowed more citizenly feeling to come into play. If there is a lesson to be learned here, it is that our collective health and well-being can be secured only through correcting the huge disparities of wealth and eco-privilege of the current world order. The more affluent nations must now promote a green renaissance founded upon an alternative politics of prosperity. There is an opportunity here to advance beyond a way of living that is not just bad for the planet and ourselves, but also in many respects self-denying and overly fixated on work and moneymaking at the expense of the enjoyment that comes with having more time, doing more things for oneself, traveling more slowly, and consuming less stuff. Nations whose environmental footprint grossly exceeds the planet's carrying capacity can no longer be aspirational models for the rest of the world. A cultural revolution along these lines will be comparable to the forms of social transformation and personal epiphany brought about through the feminist, anti-racist, and anti-colonial movements of recent history. It will not be easy to mount and will be fiercely opposed by those currently in power. But the gains it promises will be immense,

3 and without them, the future is bleak for us all. KATE SOPER is emeritus professor of philosophy at London Metropolitan University and author of PostGrowth Living: For an Alternative Hedonism. María del Rocío Sáenz Madrigal I am a doctor by training but served for four years in government as the minister of health for Costa Rica—the first woman to do so. Those years in government gave me a 360-degree view of how the health sector and public policy intersect. After I finished my term as minister and took some leave, I was called back to serve as the executive president of the Costa Rican Social Security Fund. That allowed me to see the health system from a different perspective. Serving in those positions fundamentally shaped my view that while regulation and the provision of services are extremely important, we cannot forget the role of people, populations, and the communities we serve. They must be at the center of decision-making. I think there are three lessons the pandemic has taught us. The first is that it has deepened preexisting gaps—access gaps, income gaps, inequality gaps. These are all very evident. The second, which is related, is that you cannot have a sufficient response without greater equity. Equity not only in

terms of health outcomes, but equity in how policies are designed and implemented. The third, which I think is extremely important, is the role of community and of primary health care—strengthening the services that are close to the population. Countries with stronger primary care health systems and greater penetration at the community level have without a doubt shown greater resilience during the pandemic. MARÍA DEL ROCÍO SÁENZ MADRIGAL is a professor of health promotion at the University of Costa Rica. Our collective health and well-being can be secured only through correcting the huge disparities of wealth and eco-privilege. HEALTH AND WELL-BEING 24 FINANCE & DEVELOPMENT | December 2021 POINT OF VIEW THE COVID-19 PANDEMIC is devastating evidence that when health is at risk, everything is at risk. That's true for individuals and families confronting a life-threatening illness, and it's true for countries— and the whole world—in the face of epidemics and pandemics. Beyond the death and disease caused by the virus itself, COVID-19 has disrupted essential health services for millions of people, jeopardizing many of the gains made in recent years against maternal and child mortality, HIV, malaria, tuberculosis, and more. Millions have been forced into poverty, and global income has contracted. Safeguarding people's health relies on resilient health systems that ensure everyone has access to the good-quality services they need, without facing financial hardship. This is what we mean by universal health coverage (UHC). UHC is much more than "health care" provided by health workers in health facilities; it includes a full range of services to promote health and prevent disease at the population level—outbreak surveillance, safe water and sanitation, and anti-smoking campaigns, just to give a few examples. Progress toward UHC therefore has many benefits beyond treating diseases, including improved health security and better protection against the ravages of future pandemics and epidemics. At the United Nations General Assembly in September 2019, just a few months before the pandemic struck, all countries endorsed the Political Declaration on Universal Health Coverage, affirming that "health is a precondition for and an outcome and indicator of the social, economic and environmental dimensions of sustainable development and the implementation of the 2030 Agenda for Sustainable Development." That statement is even more relevant now than it was then. The pandemic has reminded us that health is not merely an outcome of sustainable development; it is the means. How to sustain progress toward UHC While the pandemic highlights the need for UHC, we must recognize the problems that predate it. Hundreds of millions of people continue to pay large portions of their household budgets out of pocket for health care. These costs can force households into poverty, wipe out their savings, and keep them from seeking care altogether. Although COVID-19 demonstrates why UHC is so important, the pandemic may actually put it further out of reach for more people. The health crisis has triggered a global economic crisis that the world's poorest people can least afford. As a result, the already heavy debt load in some countries will only get worse, and without targeted relief, higher debt servicing costs may reduce public spending on social sectors, including health, despite a growing need for essential health services. Public financing is the core of UHC. No country has made significant progress toward UHC without relying on public monies as its main funding source. Sustained progress toward UHC is, however, about much more than how much money is spent; how well funds are spent is the key. PHOTO: COURTESY OF THE WORLD HEALTH ORGANIZATION Financing Future Health Systems We must view universal health coverage as a public policy goal and an investment Tedros Adhanom Ghebreyesus December 2021 | FINANCE & DEVELOPMENT 25 How well public funds protect households from impoverishment caused by out-of-pocket health spending depends on the design of coverage policies, backed by financing that reinforces these policies through supportive budgetary and service purchasing arrangements. This entails more

than just revenue: both the “engineering” and “architecture” of the entire health financing system must change. COVID-19 has been a stress test of public financial management systems, exposing their strengths and weaknesses in responding to a health emergency. The best-performing systems have been those with a flexible budget structure that dedicates and releases funds through broad programmatic envelopes linked to policy objectives, rather than narrowly, using multiple detailed line items. The pandemic has also shown the importance of being able to move money quickly to frontline service providers through robust transfer mechanisms and formula-based allocations. Priorities for action The pandemic has unmasked the importance of public health by demonstrating how essential it is to human lives and livelihoods. Health and finance authorities must now work together to bolster health systems and economies in a mutually reinforcing way, through several specific actions. First, we urge countries to rethink deficit spending policies, embracing a multiyear fiscal vision that cushions human hardship and, where relevant, to consider actions such as debt relief and economic assistance. UHC will take more than just one year; it requires reforms sequenced over several years. It must be embedded in annual and medium-term government budgets. Health expenditure must be seen not simply as a cost, but as an investment in health security, productivity, and inclusive economic growth. We call on health and finance leaders to collaborate on budget priorities, supporting the COVID-19 response as well as non–COVID-19 health services. Macroeconomic and fiscal constraints will require reexamination of spending across sectors, including defunding ineffective programs. Second, spending priorities must reinforce public health by increasing investment in common goods for health to control the pandemic, establishing strong health systems and bolstering societal foundations for mutual support of UHC and health security objectives. A large push is needed to establish effective public health capacities and interventions that serve all people while strengthening existing health system foundations to support preparedness for health security. Third, we urge countries to adjust public financial management systems to align public spending on health with service delivery objectives and to ensure accountability for results. The COVID-19 crisis has magnified and exposed systemic bottlenecks in health spending. It has forced countries to adapt their public financial management systems to provide greater financial flexibility to the front lines and to tailor accountability systems to respond. Some mechanisms introduced during the COVID-19 response may be considered for future nonemergency health needs that will keep evolving and require flexibility of public finances. Finally, and most important, equity must be at the center of UHC, by prioritizing protection against financial hardship for the poor and vulnerable. COVID-19 has exposed systemic inequities in access to health care, with the poor suffering disproportional losses. 3 An equity-sensitive approach is critical, given that overall health coverage rates often mask growing inequalities. TEDROS ADHANOM GHEBREYESUS is director-general of the World Health Organization. WHO staff members Helene Barroy, Joe Kutzin, and Susan Sparkes provided support for this article. Collaborating for success The World Health Organization (WHO) has worked closely with international financial institutions in the past and will deepen this engagement in the future. Examples of this work include • Joining forces with the World Bank on the sustainable financing accelerator of the Global Action Plan for Healthy Lives and Well-being for All, as well as the health financing workstream of the Access to COVID-19 Tools (ACT) Accelerator. • Engaging with the IMF on sustainable financing issues under the framework of the WHO Montreux Collaborative. • A joint review of extra-budgetary funds for COVID-19 by the WHO and the IMF was released in August 2020. • Collaborating with both the IMF and World Bank this year to work on health budget execution issues, a new program to mobilize health and finance leaders to address bottlenecks in public expenditure management systems.

December 2021 A Life Well Lived Three countries provide lessons for improving health and promoting happiness Analisa R. Bala, Adam Behsudi, and Anna Jaquiery Denmark, Costa Rica and New Zealand stand out as three countries that are getting something right when it comes to maintaining the health and happiness of their citizens. Case studies show that effectively delivering services at the community level, cultivating social trust, and accounting for well-being at the highest policy level all play an important role. Living amid the despair caused by a global pandemic has taught us that happiness, as we know it in its many forms, is important for the functioning of societies. “I’m with Aristotle on this one. Happiness, or a thriving life—or as the ancient Greeks called it, eudaimonia—is the summum bonum, the highest good,” says Columbia University economist Jeffrey Sachs, who coauthors the annual World Happiness Report, which ranks countries based on life evaluation surveys. “Happiness does not mean pleasure, or emotional highs, but rather a life well lived.” Denmark: It’s a matter of trust By her own count, Cordelia Chesnutt has taken at least 32 COVID tests. A negative test was a requirement each time she wanted to pursue her side passion of playing badminton once Denmark lifted its lockdowns. The tests, free and easy to schedule, were a small price to pay, she said, for ensuring the safety of others and, especially, maintaining a bit of happiness during the pandemic. It was also, to a large extent, an example of how many people in Denmark see their actions as a part of a collective effort. Whether it’s based in enlightened self-interest or pure altruism, social trust is paramount in Denmark. Citizens trust that the government will enact policies in the public’s interest. Government trusts that citizens will maintain the social fabric. People trust that their fellow Danes will do what is required for the greater good. This social phenomenon played out during the pandemic, leading to a remarkably successful effort at stemming the virus at a relatively low human cost. “It’s that I want to be safe, and it requires that everyone else follows the same rules and we trust that our government won’t go too far,” says Chesnutt, a 36-year-old Dane who works as a consultant on refugee issues. Researchers often point to trust as the most important cultural trait when explaining Denmark’s PHOTO: SOFIA BUSK A group of Danish women enjoy water aerobics. December 2021 | FINANCE & DEVELOPMENT 27 consistent top rankings on various measures of happiness and contentment. Rooted within society’s trust is the country’s robust social welfare system, providing generous unemployment, free health care and higher education, and heavily subsidized childcare. “Essentially with all the social support from the government, you’re redistributing a lot of money to strangers, and we know people are not likely to vote for that kind of system if they don’t have at least some degree of trust in strangers,” says Christian Bjørnskov, a professor of economics at Denmark’s Aarhus University. Bjørnskov, who recently published a book called Happiness in the Nordic World, said the cultural trait of trust is almost unique to Danish and other Nordic societies. But he argues that it’s not necessarily the extensive social welfare that makes Danes content or happy but rather a combination of trust, tolerance, strong institutions, a long history of economic development, and a resilient democracy. In at least one Danish town, officials have used happiness as a measure for setting an agenda. In 2014, the council of the picturesque fishing village of Dragør, near the capital city of Copenhagen, acted on a survey of its residents. “We wanted to see what our community’s priorities are, what are their dreams and, basically, what makes them happy,” says Eik Dahl Bidstrup, who was mayor at the time. The study, done in conjunction with the Denmark-based Happiness Research Institute, found the town’s citizens wanted better infrastructure for their leisure time. The research resulted in the construction of a new indoor swimming center, improvements to the town’s sports facilities, more programming for senior citizens, and improvements to public space in the town’s historic center and harbor. “It’s a lot about work-life balance. Work is very

important to us, but our free time is just as important. It’s an important priority for the community leaders to make sure there are good facilities, good possibilities for people to use their spare time,” says Bidstrup, now the chairman of Krifa, a Danish labor union. A lack of corruption is also key to a high level of trust. “We don’t have a corrupt political system. Most people have confidence in the political system,” says Mogens Lykketoft, a member of the Danish Parliament who in the 1990s oversaw major tax and labor reforms as the country’s longest-serving finance minister. It is this lack of corruption, a long tradition of consensus building (no single party has held a majority since the early 1900s), and general efficiency of government services that allow most people in Denmark to accept high tax rates, he said. “There is also underlying understanding of the fact that what the government provides in services for education, childcare, old-age care, health is more or less a contribution either to the efficiency of the business community or to the efficiency of the labor market,” Lykketoft says. Still, the system faces challenges. Difficulties integrating immigrants and refugees into the labor A Danish family at a COVID-19 testing site. PHOTO: SOFIA BUSK HEALTH AND WELL-BEING 28 FINANCE & DEVELOPMENT | December 2021 market and the perceived strain on the social welfare system have been an argument for reducing social benefits, Lykketoft concedes. Although the government has put in place initiatives to address this challenge, the resulting debate over immigration has eroded trust in some corners of society. During the pandemic, however, the country remained united, and policies to contain the virus averted the politicization that plagued many other democracies. Michael Bang Petersen, a professor of political science at Aarhus University, led a data-driven project looking at how democracies reacted and coped with the pandemic. The project surveyed more than 400,000 people in Denmark and seven other countries. It showed that high and stable trust in Denmark’s health authorities was a key reason for the country’s success. More than 75 percent of eligible citizens as of late October were fully vaccinated. At the height of the pandemic, more than 60 percent of the adult population was being tested each week. “I was a little bit worried when the test system was being rolled out. Is this something that people will see as an infringement on their rights?” Petersen says. “People instead saw it as something you did for each other. I’m being tested not because the state says that I need to be tested, but I am being tested so that I protect you, so that we can get back to a normal way of life much faster.” The experience from the pandemic has only reinforced the country’s overall high levels of trust both in terms of people trusting the government (the survey found over 90 percent of Danes trust national health authorities) and vice versa. “There is increasing evidence that there is a tight relationship between the functioning of political institutions and social trust,” says Petersen. “Essentially you come to trust your fellow citizens 3 when you know the political institutions in your country have your back if something goes wrong.” Costa Rica: The pure life Pura vida, the “pure life.” It’s an expression you’ll often hear in Costa Rica. One that represents the laid-back lifestyle the country is known for and gives a sense of why Costa Ricans are as happy as they are. “If you are healthy, have work, and are able to spend time with friends and family, you are pura vida,” says Luis Alberto Vásquez Castro, a former congressman for Costa Rica’s Limón province. The 2021 World Happiness Report ranks Costa Rica the 16th happiest place on earth. Aside from the Czech Republic it is the only emerging market economy listed in the top 20. For a middle-income country, that’s a lot of happiness per GDP dollar. Professor Mariano Rojas, a Costa Rican economist attributes the country’s high well-being to strong social relationships and a sense of community. “People are warm; the pace of life is slower. It’s not a competitive society where everyone is trying to climb the career ladder.” The country also has a strong welfare system. Costa Ricans have access to free education and a guaranteed state pension. It is the only country in Central America where 100 percent of the population has access to electricity and a

source of drinking water. It is also one of the few countries in the region that offers universal health coverage. Costa Rica has prioritized public health for decades, investing heavily in targeting the most readily preventable kinds of death and disability. In the 1970s, the country spent more on health as a proportion of GDP than even some advanced economies, including the United Kingdom. Those investments paid off. By 1985, the nation's life expectancy was the longest in Latin America and matched that of the United States. Child mortality rates dropped from about 74 deaths per 1,000 in 1970 to 17 by 1989. What sets Costa Rica apart, however, is its primary health care model. Implemented in the 1990s, the model built on decades of experience with rural and community health programs, changing the culture of care delivery in the country. "It brings health to the communities," says María del Rocío Sáenz Madrigal, Costa Rica's former minister of health. Every Costa Rican is assigned to an equipo básico de atención integral en salud (EBAIS)—a local primary health care team of physicians, nurses, and community health workers. Health workers visit each household annually in the area to which they're assigned to assess needs. The data they gather are combined with electronic health records and used to set targets, track progress, and focus resources on higher-risk areas. When the system was first introduced, EBAIS teams were sent to the country's most medically underserved rural areas before expanding to urban centers. "That allowed the country to build a very December 2021 | FINANCE & DEVELOPMENT 29 robust information system on the determinants of health—the conditions in which people live," says Sáenz Madrigal. "It goes beyond attending to the disease. Investment in health starts with improving the conditions and quality of people's lives. It's a very comprehensive vision of what health and wellness is." Evidence shows the model works. Life expectancy rose from 75 in 1990 to 80 (well above the US). An enviable health outcome, yet the country now spends less on health care as a percentage of GDP than the world average (7.3 percent versus 10 percent in 2017). Rojas thinks access to primary care pays. "People who are happy live longer. That's why you need to spend less. It's not only that health contributes to happiness. Happiness contributes to health." So which comes first—happiness or health? Sáenz Madrigal thinks that's the wrong question. "We have in Costa Rica what we call a social pact," she says. "Regardless of the government that comes in, the one that follows must put in one more brick. The mistake we make many times is to say, 'Everything that the previous government did is useless.' It costs more to replace a brick than to build on one. That requires long-term vision and political will." Costa Rica has had a long democratic history of leaders who have made well-being a government priority. In 1869, the country became one of the first in the world to make primary school education both free and compulsory. Cristina Eguizábal, a political science professor, believes "Costa Rica has always had a very enlightened elite." "Costa Rican elites have been wise enough to maintain a certain level of well-being through a very robust fight against poverty," she says. "Even though income inequality has widened, the percentage of people living in extreme poverty has fallen—until the COVID-19 crisis hit. That sense of security, empowerment, and equality is very important." And how did they become so wise? "Enlightenment has a dose of self-interest," explains Eguizábal. "In the 1970s the country had one of the highest deforestation rates in Latin America. Energy in Costa Rica is mostly from hydropower, and dams were drying up. The government changed course because if it didn't, the country would lose power." Today, Costa Rica is a global green pioneer. "The greener your environment, the more jobs," adds Eguizábal. There is not just one, but many good reasons to be happy in Costa Rica, it seems. Castro, the former congressman, confirms this: "Before being born, a Costa Rican is guaranteed life, education, food, social security, and the fact that he/she will only learn about war through a film...that is

a country pura vida!" New Zealand: Changing the conversation on well-being In 2019, New Zealand's Labor government, led by Prime Minister Jacinda Ardern, unveiled a budget aimed at tackling some of the long-term challenges the country faces in areas such as domestic violence, child poverty, and housing. The so-called Wellbeing Budget 2019 set out to prioritize five key areas: mental health, child well-being, supporting the aspirations of the Māori and Pasifika populations, building a productive nation, and transforming the economy. It unveiled billions for mental health services and child poverty as well as record investment in measures to tackle family violence. New Zealand, a nation of 5 million people, performs well in many measures of well-being relative to most other countries in the Organisation for A rural Costa Rican man carves wood. PHOTO: ALLAN SALAS HEALTH AND WELL-BEING 30 FINANCE & DEVELOPMENT | December 2021 Economic Co-operation and Development. But it is also among the worst for family and sexual violence, and child poverty is also a challenge. In 2020, up to 210,500 children lived in poverty (18.4 percent), according to New Zealand's statistics agency. A fundamental aspect of the country's well-being approach is the recognition that all aspects of what constitutes a good life must be considered holistically, whether it's access to health care and education or a strong sense of connection to one's community. "The good news is that the conversation has changed," says Girol Karacaoglu, former chief economist at the New Zealand Treasury and now head of the School of Government at Victoria University of Wellington. He is also the author of the book Love You: Public Policy for Intergenerational Wellbeing. "There's a realization that we need to worry about other things than income. New Zealand has taken this very seriously, and Budget 2019 is a good example of that." The budget acknowledged that health and the economy go hand in hand. Kirk Hope, chief executive of BusinessNZ, sees this as a positive step. "A lot of the investment is going into the health system. We need to get good outcomes for those investments. Well-being is critical to business. You won't have a very productive workforce without it." At the same time, a number of experts are saying that more work is needed to measure outcomes and empower communities. "Process matters critically in achieving desired well-being outcomes —and the most important shift in process is the requirement to give communities more voice and resources to drive change," says Karacaoglu. "The types of issues we are dealing with cannot be sorted out from the center—the center needs to play a listening and supporting role." The shift toward a more holistic approach means a shift in the way government works on these issues and measures outcomes. A lot of work has to go into this process, and it takes time, says Dominick Stephens, Treasury's current chief economist. "We're thinking more holistically about how to deliver better outcomes for people. But we're also continuing to build our understanding of well-being. This is hard." Emily Mason,
3 who has worked 20 years in social policy and runs a Wellington consulting firm called Frank Advice, says the measurement tools are there but the government isn't making use of them. "Well-being as a concept is the right one but you need measures and decision-making infrastructure to PHOTO: ALLAN SALAS Costa Rican countryside December 2021 | FINANCE & DEVELOPMENT 31 make it work. You need the wisdom of community and of what has gone before, and to link that to data measurement, looking at each individual over the course of their lifetime. At its heart, well-being is an individual thing." "We have that statistical ability, but we're not making full use of it." Among other things, the budget included an investment of $NZ 1.9 billion in mental health and a particular focus on reducing child poverty, an area close to the prime minister's heart. Shaun Robinson, head of the New Zealand Mental Health Foundation, says a lot more needs to be done to deliver much-needed improvements in mental health. But the government is taking positive steps, including the introduction of early support services for mental health at GP practices and community centers. "What we're not doing is giving people the tools to take care of their own well-being and that

of the people around them," he says, adding that a recently unveiled 10-year mental health strategy does acknowledge this point and is a step in the right direction. While some say the results of the well-being budget are yet to be seen, they also recognize the impact of the pandemic. "Since 2019, the government has been consistent in its goals in subsequent budgets, despite being hugely challenged by COVID-19," says Karacaoglu. Maree Brown, director of the Child Wellbeing Unit in the Department of the Prime Minister and Cabinet, says COVID-19 "upped the ante. …The Child and Youth Wellbeing Strategy already had a strong focus on joined up responses to improve the well-being of children and young people with greater needs. COVID meant we had to redouble those efforts." The strategy, launched in August 2019, sets out a shared understanding of what young New Zealanders said they want and need for a strong sense of well-being, what the government is doing, and how others can help, Brown says. She says local pandemic responses demonstrated the strengths that reside in communities — strengths the government should tap into. "In the past, we've tended to design too many initiatives from the center. Increasingly, there's a move to devolve resources and decision-making, to codesign with families and community stakeholders, and to resource Māori and other providers to develop solutions that work for their communities." "It's a work in progress but absolutely the right direction to be moving in." Reported by ANALISA R. BALA, ADAM BEHSUDI, and ANNA JAQUIERY. Playground in Wellington, New Zealand. PHOTO: JENNY TREVELYAN HEALTH AND WELL-BEING 32 FINANCE & DEVELOPMENT | December 2021 TheGood Life ART: SALLY DENG; ISTOCK / TAMARA LUIZA December 2021 | FINANCE & DEVELOPMENT 33 TheGood Life MEASURING THE ESSENCE OF The search continues for a better gauge of prosperity than GDP alone Daniel Benjamin, Kristen Cooper, Ori Heffetz, and Miles Kimball Gross domestic product (GDP), which measures the total output of goods and services in an economy, has flaws when used to gauge the well-being of a nation's residents. For example, to the question of whether people in the United States are better-off in 2021 than they were before the COVID-19 pandemic, the answer would be yes, slightly, if per capita GDP is the yardstick. That's because real (inflation-adjusted) per capita GDP rose from $58,333 in the fourth quarter of 2019 to $58,454 in the second quarter of 2021. But that affirmative answer is likely to ring hollow to many. The United States does not appear better-off. It experienced a fourth wave of COVID-19 infections in late 2021 that left thousands dead. Many businesses are still shuttered, and millions remain unemployed. The country is deeply divided socially and politically. GDP captures neither the enormous human costs of the pandemic, nor the nation's social and emotional disruptions. The recognition that GDP cannot encompass many dimensions of well-being has prompted efforts to develop measures that reflect a more complete account of what people care about. The idea is not to give up on GDP—nor to replace it with some other one-dimensional measure, such as self-reported life satisfaction, which, like GDP, gives only a partial and hence potentially misleading picture. Instead, a measure that captures many dimensions of national well-being and complements GDP is needed. Fleurbaey and Blanchet (2013) provide an overview of this idea as well as many other so-called Beyond GDP proposals and initiatives. In this article, we discuss the Human Development Index (HDI), an alternate measure of well-being that has been influential in developing economies. We then turn to our proposed approach to measuring national well-being, which is based on aggregating people's survey responses about many dimensions of their welfare. The Human Development Index The HDI's roots are in the capabilities approach to well-being advanced by Amartya Sen (1985). Capabilities are the features of individuals and their state of life that determine the activities and internal experiences a person can effectively choose. The approach puts a direct value on freedom in the practical sense of what an individual can do. Martha Nussbaum (2011) elaborated

on Sen's idea by offering a concrete list of core capabilities—including life span, health, freedom from violence and constraint, imagination and thought, emotions, freedom to chart one's own course in 34 FINANCE & DEVELOPMENT | December 2021 life, good social relationships, the natural world, play, political participation, and property rights. The HDI transforms several dimensions of well-being into a single yearly index to rate a country's performance. Sen was leery of aggregating measures of different capabilities. But when policymaking requires trade-offs, judging whether one policy is better than the alternatives requires an index. Moreover, having a single number makes it difficult for government officials to cherry-pick whichever statistic makes things look rosiest. Creating an index requires weighting the capabilities relative to one another. For GDP, prices provide the weights for the goods and services it includes. But because GDP relies on market transaction data, it fails to include things human beings care about that do not run through the market—such as leisure time, relationships with family and friends, and emotional experiences such as anxiety and sense of purpose. Moreover, although prices may represent the relative importance of different market goods and services to the well-being of an individual or household, they do not countenance the possibility that a dollar spent by a family in poverty might do more for national well-being than one spent by a billionaire's family. Constructing the HDI On its website, the United Nations Development Programme (UNDP) describes the HDI as "created to emphasize that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone." But after those lofty words, the description turns to technical detail: "HDI is a summary measure of average achievement in key dimensions of human development: a long and healthy life, being knowledgeable, and having a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions." The technical details determine how the UNDP puts into practice its lofty goal: which dimensions of well-being (or capabilities) the HDI tracks, what it leaves out, and what relative importance it gives to the things it does track. For example, according to the geometric mean used by the HDI, a percentage change in HDI is the equally weighted average of the percentage changes of its components. The HDI is surely the best-known practical application of Sen's capabilities approach. It provides a single, simple number that both summarizes the state of a country at a point in time and is easy to construct and explain. Getting to less arbitrary Still, although it captures more dimensions of well-being than GDP does, the HDI is arbitrary in its choice of what to include and how to weight what it does cover. The goal of an enhanced well-being index is to include many more than three dimensions of well-being and to weight them based on the values of the people in the country. A major reason the HDI focuses on longevity, education, and income is that when the index was introduced in 1990, these important dimensions of a good life were among the few variables being widely measured across countries in a reasonably comparable way. Unavailability of data has similarly constrained the reach of other Beyond GDP initiatives—such as the Genuine Progress Indicator and the Organisation for Economic Co-operation and Development's (OECD's) Better Life Index. But lack of current data should not constrain our vision of what a good index should look like. Some Beyond GDP initiatives have gotten around these data constraints by using surveys, which can be conducted relatively cheaply around the world in real time. Indeed, real time is crucial to policymaking. For example, how the HDI performed during the pandemic is still unknown because, at the time of this writing, the latest numbers available are for 2019. Some researchers have proposed using single-question survey measures of happiness or life satisfaction. However, research, including some of our own with Alex Rees-Jones of the University of Pennsylvania, suggests that answers to these survey questions do not capture the full range of what people Because GDP relies on market transaction data, it fails to include things human beings care about that do

not run through the market. December 2021 | FINANCE & DEVELOPMENT 35 care about when they make choices. Partly to address this shortcoming, other Beyond GDP initiatives, such as those of the OECD and the UK Office of National Statistics, ask additional survey questions to measure dimensions of well-being other than happiness or life satisfaction. But multiple survey questions reintroduce the question of how to weight the dimensions of well-being relative to one another. Our research makes clear the importance including multiple components in a measure of national well-being and the importance of getting the weighting right. Those issues are at the core of our efforts to construct a theoretically sound well-being index. The weights we recommend are relative marginal utilities— traditionally defined as the additional satisfaction an individual realizes from one more unit of a good or service, but in this case from one more unit of an aspect of well-being. We propose to estimate marginal utilities based on stated preferences in specially designed surveys, described below. Some older results illustrate our approach, which we are still developing. In Benjamin, Heffetz, Kimball, and Szembrot (2014) we asked survey questions about 136 aspects of well-being—a list that aimed to comprehensively reflect all proposed aspects of well-being. (An actual index should comprise fewer aspects of well-being and avoid, or adjust for, conceptual overlaps.) The table shows estimated weights based on policy choices—described as "national policy questions that you and everyone else in your nation vote on." Respondents chose between pairs of hypothetical policies, which involved trade-offs between aspects of well-being. Our statistical procedure inferred weights for the aspects of well-being based on respondents' choices, so that an aspect of well-being is assigned higher weight if it has a bigger impact on the policy respondents preferred. Because of space constraints, the table illustrates the results using 18 of the 136 aspects of well-being: the three with the highest weights, other interesting aspects in the top 10, every aspect that seems closely related to HDI components, other aspects for which data are widely collected, and an aspect on the natural environment. We normalize the weight on the top aspect—freedom from corruption, injustice, and abuse of power—to 1.00. Although many things could be said about the table, we limit ourselves to three points. • Many of the top aspects are clearly capabilities in Sen's sense, including the first one, which does not guarantee a good life, but helps make one possible. • A number of important aspects of well-being— with weights of at least 75 percent of the top aspect—are missing from many measures of national well-being, such as the HDI. • The weights for many aspects of well-being that have received much attention are well below the weights for those at the top. For example, "people not feeling anxious"—one of four aspects collected in large samples of individuals by the UK Office of National Statistics—is weighted less than a quarter of the top aspect. For those relevant to the HDI, "people's health" and "people's financial security" have almost three-quarters the weight of the top aspect, but others—knowledge, skills, and access to information; understanding the world; long lives; and average income—have weights no higher than 54 percent of the top aspect. HEALTH AND WELL-BEING Quantifying well-being A personal well-being index is based on aspects of an individual's welfare, each of which is assigned a weight based on surveys that determine people's values and priorities. Aspect Weight Freedom from corruption, injustice, and abuse of power in your nation (normalized to 1.00) 1.00 People having many options and possibilities in their lives and the freedom to choose among them 0.90 People being good, moral people and living according to their personal values 0.90 People's sense that they are making a difference, actively contributing to the well-being of other people, and making the world a better place 0.82 People's freedom from being lied to, deceived, or betrayed 0.77 Society helping the poor and others who struggle 0.77 People's health 0.74 Freedom of speech and people's ability to take part in the political process and

community life 0.74 People’s financial security 0.72 The extent to which people feel the things they do in their lives are worthwhile 0.62 How happy people feel 0.59 The condition of animals, nature, and the environment in the world 0.56 People’s knowledge, skills, and access to information 0.54 People’s chances to live long lives 0.49 How satisfied people are with their lives 0.46 The average income of people in your nation 0.44 People feeling that they understand the world and the things going on around them 0.38 People not feeling anxious 0.23 Source: Benjamin, Heffetz, Kimball, and Szembrot (2014). Note: The weights are derived from surveys of stated preference on 131 aspects of public policy. The weight on the top aspect is normalized to 1.00. 36 FINANCE & DEVELOPMENT | December 2021 Using stated preference To construct personal well-being indices—which are aggregated to develop a national well-being index— our approach involves asking two types of survey questions about the aspects of well-being: ratings and trade-offs. In a rating question, respondents move a slider from 0 to 100 to indicate their level of an aspect of well-being over the past year. In a trade-off question, respondents choose between two options. In each trade-off option, the level of one or more aspects of well-being is slightly higher or slightly lower than the reported level in the rating question. In the illustration above, the choices between national policies are examples of trade-off questions. In Benjamin, Heffetz, Kimball, and Szembrot (2014) we argue that for an individual, a well-being index can be constructed similarly to the way consumption is measured in the national accounts that are used in calculating GDP. Consumption calculations rely on quantities and prices. To compute a well-being index, reported levels of aspects of well-being from the rating questions are substituted for quantities, while the weights reported in the table are used in place of prices. The weights—derived from the trade-off questions that reveal the choices people make between aspects of well-being— represent people’s values and priorities. In Benjamin, Cooper, Heffetz, and Kimball (2017) we lay out how much remains to be done to develop a full national well-being index that is consistent with modern welfare theory in economics. Here are three areas in which we have made the most progress to date. First, large differences in how different people use any given scale for measuring their well-being make well-being measures seem subjective. We developed what we call “calibration questions” to test for systematic differences in people’s scale use—for example, some people use the whole scale, from 0 to 100, and others use only 50 to 100. We can use calibration ratings to correct for some such scale-use differences—both across individuals and even potentially across time for the same individual. Second, we hypothesize that the trade-offs people make between different aspects of well-being are likely to differ according to demographics—such as age and education—and how well-off people are overall. We can use such systematic tendencies to create reasonable weights

3 without needing a huge amount of data to estimate each individual’s weights. Third, we propose that the index take into account inequality—not just in income or wealth, but in personal well-being. We do not assume that an index of personal well-being can be simply added up across people to get a national index. That would imply, for example, that national well-being is at the same level whether everyone is at 50 or half the people are at 10 and half are at 90. If as a society we judge the more equal situation to be better, that society has some degree of aversion to well-being inequality, which requires employing a level of inequality aversion to transform the personal well-being indices before totaling them to obtain a national index. “What gets measured, gets treasured” is an important maxim. In the well-being sphere, this means policymakers and development practitioners should carefully consider which metrics they monitor. Perhaps equally important, though, is properly weighting them. We can add a new adage: “What we give weight to, we value.” DANIEL BENJAMIN is a professor at the University of California, Los Angeles. KRISTEN COOPER is an associate professor at Gordon College. ORI HEFFETZ is an associate professor at The Hebrew

University of Jerusalem and Cornell University. MILES KIMBALL is a professor at the University of Colorado, Boulder. References: Benjamin, Daniel J., Kristen B. Cooper, Ori Heffetz, and Miles S. Kimball. 2017. "Challenges in Constructing a Survey-Based Well-Being Index." American Economic Review 107 (5): 81–85. Benjamin, Daniel J., Ori Heffetz, Miles S. Kimball, and Nichole Szembrot. 2014. "Beyond Happiness and Satisfaction: Toward Well-Being Indices Based on Stated Preference." American Economic Review 104 (9): 2698–735. Fleurbaey, Marc, and Didier Blanchet. 2013. Beyond GDP: Measuring Welfare and Assessing Sustainability. Oxford, UK: Oxford University Press. Nussbaum, Martha. 2011. Creating Capabilities: The Human Development Approach. Cambridge, MA: Harvard University Press. Sen, Amartya. 1985. Commodities and Capabilities. Oxford, UK: Oxford University Press. Policymakers and development practitioners should carefully consider which metrics they monitor. When the news broke in 2020 that scientists had raced ahead with efforts to create vaccines for COVID-19, policymakers and voters around the world cheered. No wonder: the development of these vaccines is a triumph for 21st century medical and computer science, raising the chances that the world will beat the pandemic. However, in 2021 it has emerged that there is a catch: quite apart from the fact that distribution of the vaccine has proved to be lamentably—and dangerously—inequitable, not least because of the structures of the global political economy, vaccination even in some rich countries is turning out to be difficult. The reason? Culture—as defined by the web of half-acknowledged rituals, symbols, ideas, spatial patterns, and social affiliations that shape humans, wherever they live. Most notably, in places such as the United States, there has been so much vaccine resistance—or "hesitancy," to use the polite euphemism—that it has undermined efforts to stop the pandemic. Anthropology is vital for building back better Gillian Tett LISTENING TO SOCIAL SILENCE December 2021 | FINANCE & DEVELOPMENT 37 ART: ISTOCK / RAWPIXEL; CNYTHZL; TATIANA PANKOVA 38 FINANCE & DEVELOPMENT | December 2021 And while some jurisdictions—such as France — have managed to overcome initial vaccination hesitancy (at least to some degree), the fact that there even are such battles illustrates a crucial, but oft-ignored, point about policymaking today. Effective responses to fast-moving (or even slow-moving) challenges require more than reliance on so-called hard sciences, such as medical research or the powers of big data. You need "soft" science too, to understand human behavior and culture. Or to put it another way, it is a profound mistake to try to solve public policy problems today just by relying on one set of intellectual tools, deployed with tunnel vision. You need lateral vision, to appreciate the wider human context and how elements that lie outside your model, big data set, or scientific trial could affect what is happening. Culture, as defined above, matters, along with environmental and political systems—and not just the pieces of our cultural systems that we openly notice (the "noise") but also the pieces we tend to ignore because they are embarrassing or familiar or too complex to discuss (the "silence"). We need lateral vision to deal not only with pandemics but also with a host of other issues around economic development and policymaking—climate change, pensions, and so on. Trying to devise effective policy purely on a technical basis, such as with a narrowly bounded economic model or with engineering science, is akin to walking through a dark wood at night looking only at a compass dial. No matter how technically brilliant your tool might be, if your eyes are fixed on it alone, you will trip over a tree root. Context matters. How can policymakers adopt that lateral vision? I would suggest that one way to do this is to borrow some ideas from a field I trained in, before becoming a financial journalist: cultural anthropology. This might sound odd to some policymakers, given the discipline's often rather dusty, exotic image—its adherents viewed as academic versions of Indiana Jones who spend their time traveling to remote locations to study colorful rituals that seem

far removed from 21st century economic challenges. However, this stereotype is not just wrong—it also creates a gigantic missed opportunity. Yes, anthropologists are dedicated to studying human culture, in all its glorious spectrum of difference. But they do not do this in a patronizing manner (unlike the early 19th century anthropologists, who had a deplorably racist, sexist, and imperialist bent). Instead 21st century anthropologists believe that it is important to study different cultures, with respect, because that process not only yields empathy for strangers, which is crucial in a globally integrated world, it also helps us understand our own cultures better—wherever we initially hail from. It is a win-win. After all, as the Chinese proverb goes: “A fish cannot see water.” People cannot clearly evaluate the underlying cultural assumptions they have absorbed from their surroundings unless they step back and compare them to those of others—or jump out of the fishbowl. Immersing yourself in the lives of others and tasting a little culture shock, as anthropologists do, gives you a more objective sense of your own society’s strengths and flaws— and “social silences.” As an added bonus, peering at other cultures can introduce you to new ideas and ways of solving problems. Last but not least, since anthropologists tend to take a worm’s-eye view (that is, look at things from the bottom up, in a holistic way), taking a good look at other cultures offers a different vantage point than bird’s-eye (that is, top-down) analyses. This sounds abstract. But consider for a moment what might have happened if policymakers had adopted an anthropologist’s lens when COVID-19 erupted. To some extent, Western governments and voters would not have been so badly tripped up if they had known more about the spread of epidemics in other cultures. Assuming that diseases such as SARS, Ebola—and COVID-19—were problems exclusive to the other side of the world, Wuhan, or to people who seemed so “weird” or “exotic,” led to dangerous complacency. Nor would Western governments have had so much hubris about their own health care systems. Looking at the way the West developed medicines, conveyed health care messages, and promoted public health with an insider-outsider eye would have made it easier to see the shortcomings. An anthropologist’s mindset could have helped Western governments import valuable lessons from other regions. Take masks. Anthropologists working in Asia have long argued that the efficacy of masks does not rest simply on physical factors—how fabric can stop germs—the act of putting one on is a powerful psychological prompt that reminds people to change their behavior and signals a person’s commitment to protecting a social group, which is crucial in a pandemic. This suggests that policymakers grappling with a pandemic should use every If we ignore the cultural and environmental context of people’s lives, we all suffer. signal possible to encourage people to embrace this practice, even if it flies in the face of Western ideas about individualism. But this is not what initially happened in some places. In the United Kingdom, for example, the government discouraged mask wearing early on, and even after it later changed tack, the prime minister, Boris Johnson, shunned masks in public. Although that stance eventually changed, policymakers in Britain (and elsewhere) might have paid more attention to consistent messaging if they had known more about the Asian experience. Similarly, governments should have recognized earlier the importance of cultural context when trying to disseminate health care messages and change behavior, since people rarely think about risk the way scientists do. Anybody who knew anything about Ebola in West Africa in 2014 understood this point well, since the disease was beaten—after earlier missteps—only when the messaging became more sensitive to cultural context and behavioral science was blended with anthropology, medical science, and computing. To cite one example, when global health groups initially built centers to treat Ebola victims in 2014, these featured opaque walls, which made it impossible for victims’ families to see what was happening to their loved ones, and messages about Ebola were presented in terms that local people could not understand. When the messaging

became more sensitive and the walls of treatment centers were redesigned to be transparent, compliance with doctors increased. Listening to local voices is crucial. Some of these lessons about the need to be culturally sensitive have been adopted with COVID-19. Although vaccination messages were initially presented almost exclusively through the voice of scientists, for example, governments in the United States and Europe have (belatedly) realized that these "elite" messages do not resonate with some people and have switched to community voices. But this lesson now needs to be applied to numerous other policy challenges too. Climate change is perhaps the most important example. Unless governments and scientists can present environmental messages in ways that resonate in different cultures, with the right incentives, they will not rally voter support for green policies or persuade people to embrace behavioral changes, let alone motivate them to collaborate for the good of others. Top-down models of green policies are not enough: you need a worm's-eye view as well, with empathy for people's lives, to build a just transition and avoid a backlash against green reforms. Consider attitudes toward renewable energy. In the eyes of Western urban elites, it seems self-evident that energy sources such as wind and solar are morally superior to fossil fuels such as coal. However, these privileged urbanites live far from rural locations that could be blighted by the construction of wind turbines. Nor do they suffer the loss of identity (and livelihood) that can occur in a coal mining town when the local mine shuts down or the economic hardship of poor people when the cost of transportation rises. Empathy is needed for effective strategies to fight climate change, as well as awareness that most ordinary citizens do not see the world the way engineers and economists do. Don't get me wrong: I am not saying that economists, doctors, computer scientists, and financiers should jettison their tools, nor that cultural anthropology is a magic wand that imparts wisdom. Like all intellectual traditions, the discipline has shortcomings, most notably that its insights can be hard to scale, and since it is mostly a qualitative, not quantitative, lens on the world, the messages can be difficult to communicate. Defining culture can seem like chasing soap in the bath: it is everywhere, but nowhere. The key point is this: if we ignore the cultural and environmental context of people's lives, we all suffer. Conversely, if we incorporate it into our analysis, we can create more effective policy tools, with better checks and balances. The key is to combine computer, medical, economic, and financial science with social sciences and blend a worm's- and bird's-eye view. This will help us study both the noise in our lives and the silence—and build back better. GILLIAN TETT is trained as a cultural anthropologist but now chairs the editorial board of the Financial Times, US. She is the author of Anthro-Vision: A New Way to See in Business and Life. 40 FINANCE & DEVELOPMENT | December 2021 PHOTO: PORTER GIFFORD PEOPLE IN ECONOMICS DATADRIVEN Chris Wellisz profiles MIT's Amy Finkelstein, who tests economic models with large data sets December 2021 | FINANCE & DEVELOPMENT 41 PEOPLE IN ECONOMICS E ver since she produced a report on elephants in the first grade, Amy Finkelstein knew she would be a scholar like her parents, both PhD biologists. But it wasn't until her senior year at Harvard College that she chose economics. Majoring in political science, she decided to take a course in applied microeconomics. It was 1994, and the topics reflected some of the contentious issues of the day in the United States, including how cash welfare payments affected labor force participation and whether people moved around the country in search of more generous welfare benefits. "That was a totally transformative experience for me," Finkelstein recalls. "It opened my eyes to the idea that one could use data to inform what had otherwise seemed like ideological debates." In the years since, Finkelstein, who now teaches at the Massachusetts Institute of Technology (MIT), has established herself among the country's preeminent health economists. In a series of groundbreaking studies, she delved

into the mechanics of an industry that accounts for 18 percent of US gross domestic product and has been at the center of fierce debates over the government's role in providing health insurance. Her work has earned her the MacArthur Fellowship and the John Bates Clark Medal, awarded every year by the American Economic Association to the American economist under 40 judged to have made the biggest contribution to the field. Finkelstein's extensive body of work ranges across a wide variety of issues, large and small, from estimating the welfare benefits of alternative social insurance programs to the effectiveness of mammogram screening. The common thread: using large data sets to test economic models—and arriving at conclusions that often challenge conventional wisdom. "What I love about economics is the models and frameworks—the lens it gives you for how to think about social policy problems," she says. "But I'm not a theorist, and at the end of the day what I like to do is take those models and see how they work in the real world and what the quantitative implications are." Finkelstein is a torchbearer for what fellow MIT economist and 2021 Nobel laureate Joshua Angrist has called the "credibility revolution" in empirical economics, which focuses on designing studies that seek to replicate some of the certainty of experiments in the natural sciences. "That approach has percolated widely into many fields in economics," says MIT's James Poterba, who was one of Finkelstein's thesis advisors. "Amy has been very influential in pushing that forward in the field of health economics." Unusually for someone with comparatively little economics training, she won a Marshall Scholarship to study for a master's degree in economics at the University of Oxford. But the technical nature of the coursework—which seemed to have little relevance to solving real-world problems—left her uncertain about pursuing a doctorate. White House interlude So she accepted a junior post at the White House Council of Economic Advisers in the Bill Clinton administration. Working for a year alongside economists who could bring their academic training to bear on practical issues like the minimum wage "made it very clear that I absolutely wanted to get a PhD in economics," she says. It also introduced her to markets for insurance against all types of risks, from unemployment to natural disasters. She found them fascinating because they often seemed to defy the laws of supply and demand, offering scope for government efforts to correct market flaws and improve human welfare. She applied to MIT, where her dissertation on the impact of policy changes on health insurance markets laid a foundation for much of her subsequent work. She went on to collaborate on a number of articles with Poterba, including studies of so-called information asymmetries in insurance markets, whereby buyers of policies have more information about their riskiness —their likelihood of filing a claim—than insurance companies. For years Finkelstein considered herself an insurance economist, not a health economist.
3 But over time, she gravitated toward health, initially drawn to the rich data and fertile ground to study the impact of various policies on insurance markets but ultimately because she grew fascinated by the subject. In a 2007 paper, she probed the reasons for the dramatic increase in US health care costs, using data from the 1965 introduction of Medicare, the insurance program for the elderly. To isolate the impact of Medicare, she took advantage of the fact that before 1965, different regions of the country had widely varying rates of private health insurance. Her conclusion: Medicare resulted in an increase in hospital spending that was six times greater than earlier research would have predicted. Finkelstein says she keeps a mental list of questions that interest her and an eye out for settings that will help her find the answers. That is what happened in 2008, when the host of a TV comedy show she was watching joked about the state of Oregon's decision to use a lottery to choose a limited number of people to be enrolled in Medicaid, the health insurance program for low-income adults. The lottery provided an ideal opportunity to conduct a randomized controlled trial, the gold standard for scientific research. "Oh my God, an RCT!" Finkelstein recalls

thinking. “We’ve got to get the data!” Commonly used in medicine to test new drugs and vaccines, randomized controlled trials were relatively rare in health care policy. Finkelstein saw an opportunity to compare one group—chosen at random for Medicaid coverage—with a similar group who signed up for the lottery but weren’t enrolled. Team research She joined forces with Katherine Baicker, a health economist who now heads the University of Chicago’s Harris School of Public Policy. They quickly assembled a team that included doctors, an epidemiologist, health services researchers, statisticians, and partners in the state government. “She has appreciated the power of the team research model in economics, which has become very popular,” Poterba says. Finkelstein traveled to Oregon multiple times, to meet with people in the health care system and the state government and watch focus group interviews with study participants. The team conducted mail surveys as well as in-person interviews and health exams over the first two years after the lottery. Their conclusions: Medicaid significantly increased the probability of using medical care of all kinds—primary care, preventive care, emergency room visits, and hospital admissions— increasing total health care spending by about 25 percent. Medicaid also bolstered financial security and reduced people’s risk of suffering from depression. The Oregon experiment coincided with a debate over the costs and benefits of expanding Medicaid as part of the Affordable Care Act, which was enacted in 2010. Supporters argued that expanded coverage would reduce costs by improving health and so cutting down on inefficient use of hospitals. Many critics said Medicaid provided little benefit that recipients couldn’t get on their own. Finkelstein’s results cast doubt on both arguments. Similarly, in a 2016 paper, Finkelstein and her coauthors took on the widely accepted view that health care responds little to the competitive market forces of other industries. They looked at which hospitals Medicare patients (or their doctors) chose for conditions and procedures such as heart attacks and hip replacement surgery, which accounted for almost a fifth of Medicare spending. They found compelling evidence that higher-quality hospitals had greater market share, which tended to grow over time, suggesting that market forces played a bigger role than previously thought. “She’s a strong believer in the evidence, and if the evidence goes against the conventional wisdom or it goes against the theory. . .you ought to pay attention to it,” says Harvard’s Lawrence Katz, who taught the undergraduate course that inspired Finkelstein’s love of economics. Finkelstein’s interest gradually shifted from the impact of health policy on consumer behavior and welfare to looking at how health care providers respond to incentives. And while she generally sticks to the measured language of scholarly publications, the title of a 2021 paper, co-written with Stanford University’s Liran Einav and Neale Mahoney, seems intended to provoke controversy—“Long-Term Care Hospitals: A Case Study in Waste.” Until the early 1980s, there were only a few dozen such hospitals in the United States. But when a new payment system limited Medicare reimbursements for so-called acute care hospitals, it made an exception for long-term care hospitals (LTCHs), which are reimbursed at far higher rates than comparable skilled nursing facilities. The result: the number of LTCHs eventually mushroomed to more than 400. Finkelstein and her collaborators found that when LTCHs come into a market, they essentially care for patients who would otherwise have gone to a skilled nursing facility. They were paid about a thousand dollars a day more and had “no measurable benefits on, say, mortality or the chance you’ll be home in 90 days,” she says. After crunching 17 years of data, they concluded that Medicare could save about $4.6 billion a year by reimbursing LTCHs on the same basis as skilled nursing facilities—with no harm to patients. Finkelstein says the paper is an example of what MIT professor and Nobel laureate Esther Duflo 42 FINANCE & DEVELOPMENT | December 2021 PHOTO: ISTOCK / KINGWIN calls the “plumbing approach” to economics— identifying

specific flaws that can be fixed relatively easily, as opposed to coming up with big systemic solutions that may have disappointing results or unintended consequences. The paper generated interest in Congress and meetings with legislative staff, but no concrete action. The industry pushed back, saying that patients in LTCHs receive benefits that weren't reflected in the study, such as reduced pain and greater comfort. "That's a perennial problem in health economics research," Finkelstein says, "because often we can't measure all aspects of health." Making a mark Finkelstein says she's not frustrated by the lack of immediate impact on policy. She hopes to make a mark in other ways, by influencing the work of other economists and training and supporting the next generation of scholars. To that end, she and Katz established J-PAL North America, which the two codirect, in 2013. A branch of the Abdul Latif Jameel Poverty Action Lab (J-PAL) cofounded by Duflo, J-PAL North America provides staff, money, and training to help scholars conduct randomized controlled trials across a range of areas, from health care and housing to criminal justice and education. "Some of the junior people that we were helping start their first RCTs are getting tenure or have gotten tenure and now are moving into leadership positions and able to give back themselves," she says. She gets high marks for teaching and mentoring students, some of whom have become collaborators. One is Heidi Williams, who was a research assistant for Finkelstein and now teaches at Stanford University. Williams and Finkelstein have collaborated on studies that examine how moving from one place to another can affect a person's level of health care spending, their health, and the chances of opioid addiction. Williams marvels at Finkelstein's ability to solve knotty problems of methodology, like how to account for the impact of variables that cannot be directly observed. "I learned as much from collaborating with her as I did as a student and a research assistant," Williams says. Finkelstein is also what Poterba calls "a very important provider of public goods within the profession." In 2017, she founded American Economic Review: Insights, a journal that she continues to edit. Published by the American Economic Association, it's an effort to overcome the lengthy review and revision process of traditional journals and to get relatively short articles into print quickly. She and Williams are codirectors of the Health Care Program at the National Bureau of Economic Research. Given her intense focus on academic work, it's perhaps not surprising that Finkelstein met her future husband, Benjamin Olken, at an economics seminar when both were graduate students. He is now a professor at MIT specializing in the public sector in developing economies. In her limited spare time, Finkelstein says she likes to read nonfiction books aimed at a general audience. "I really appreciate it when academics in other disciplines or even my own write a user-friendly version of what they've learned," Finkelstein says. "So I thought it would be fun to try." She is now

working on a book with longtime collaborator Liran Einav of Stanford and Raymond Fisman of Boston University. The book is aimed at lay readers and will seek to "explain how you can be a real libertarian and still think there's scope for government intervention in insurance markets," she says. Finkelstein said she and her collaborators joked that the book, titled Risky Business, should have been called Is Insurance Different from Broccoli?—a reference to a quip by the late US Supreme Court Justice Antonin Scalia, who wondered whether Americans, if required to buy health insurance under the Affordable Care Act, could also be made to buy broccoli. She sees the book as an extension of teaching. "Except now instead of teaching students, we're trying to reach a general audience." CHRIS WELLISZ is a freelance writer and editor. "I really appreciate it when academics in other disciplines or even my own write a user-friendly version of what they've learned." PICTURE THIS From lab to jab COVID-19 vaccines were developed at a speed never seen before in history. 1880 1900 1920 1940 1960 1980 2000 2020 Malaria Tuberculosis* Meningitis Whooping cough

Dengue fever Polio Zika fever Chickenpox Measles Hepatitis Ebola Cervical cancer (HPV) COVID-19 Typhoid fever 1884 1889 1906 1907 1908 1953 1953 1965 1976 1981 1983 AIDS (HIV) 1989 1981 1948 1955 1995 1963 1981 2019 2006 1947 1882 1880 Year in which vaccination was licensed in the US Year in which the infection was linked to the disease Disease Sources: Our World in Data; and IMF staff analysis. Note: *The only vaccine against tuberculosis is bacillus Calmette-Guérin (BCG), but there is no effective vaccine to prevent tuberculosis in adults. There is a partially effective vaccine against Dengue virus (CYD-TDV). Not all cervical cancers are caused by the HPV virus, but the HPV vaccine does protect against other cancers caused by the HPV virus. The hepatitis vaccine in the chart is for hepatitis B. Shooting up (Share of world population fully vaccinated against COVID-19) 20% 10% 0% Dec-20 Feb-21 Apr-21 Jun-21 Aug-21 Nov-21 30% 40% Source: Our World in Data. Last updated November 10, 2021. World excl. China Dec. 14, 2020: The first COVID-19 vaccine dose is administered to the public in the United States. About one year down and 40% of the world is now vaccinated. World The development of COVID-19 vaccines has been miraculous, but the path to inoculating the world presents many obstacles THE JOURNEY OF THE COVID-19 VACCINE IN 1882, Dr. Robert Koch discovered the bacteria that cause tuberculosis (TB), at a time when it killed one of every seven people in the United States and Europe. But a vaccine wasn't developed until 1921, and it offers only moderate protection against severe TB in infants and young children. No vaccine effectively prevents TB in adults, and the disease claims 1.5 million lives a year. In contrast, COVID-19 was identified in January, 2020. By December 2 of that year a vaccine developed by BioNTech and Pfizer was approved for emergency use in the United States. Other vaccines have since come on the market. While TB and COVID-19 are different diseases, with unique challenges, the exceptional public financing and regulatory support for COVID-19 vaccine research, development, testing, and manufacturing have been a game changer. December 2021 | FINANCE & DEVELOPMENT 45 PICTURE THIS A tale of three worlds Secured vaccines, administered vaccines, and subnational administration of doses paint three very different pictures of the world's vaccination progress. Picture 1: Secured vaccines and/or expected vaccine supply (percent of population) Picture 2: Vaccine coverage—at least one dose administered (percent of population) Picture 3: Subnational—population fully vaccinated in India by district (percent of population) 10% 20% 30% 40%+ 0% 10% 20% 30% 40% 50%+ 0% 20% 40% 60% 80% 100%+ Sources: CoWIN; IMF Staff Proposal to End the COVID-19 Pandemic; Our World in Data; and IMF staff calculations. Note: Country borders do not necessarily reflect the IMF's official position. Picture 1 was updated as of November 5; Picture 2 as of November 9; Picture 3 as of October 26. ART: ISTOCK / TOMOGRAF The journey of the COVID-19 vaccine has only just begun, however. The challenge now is to immunize the world and continue to conquer new variants. There has been good progress on the first front so far—total vaccination rates have risen and continue to rise rapidly. A look at the data behind the high-level numbers, however, reveals some worries that must be addressed quickly to reach the global vaccination target of 40 percent in every country by the end of 2021 and 70 percent by mid-2022. On the surface—in terms of secured or expected delivery of doses—things appear to be going well. Most advanced economies have contracted more than enough vaccines to cover their entire population and even many developing countries have managed to do the same directly or indirectly through vehicles like COVAX. There is a problem, though, with doses delivered: a disconnect between vaccines on paper and those at port. For example, COVAX, which delivers vaccines to developing economies, has contracted and received donation pledges for over 3 billion doses, but only about 440 million of those have been received so far. The result of this is a deep inequity in doses administered across countries: high-

income countries have vaccination rates exceeding 65 percent, while many low-income countries barely top 3 percent. This is why the IMF is urging immediate action to prioritize deliveries to those developing economies with low vaccination rates. Data at the subnational level reveal another problem—uneven distribution of vaccine coverage. As seen in some advanced economies, once the near term supply challenge is addressed, demand and vaccine hesitancy may become the next big obstacle for developing countries. ANDREW STANLEY is on the staff of Finance & Development. 46 FINANCE & DEVELOPMENT | December 2021 PHOTO: GETTY IMAGES / JOHN WESSELS / AFP Benjamin Franklin once famously said, "An ounce of prevention is worth a pound of cure." He also warned, "By failing to prepare, you are preparing to fail." The importance of prevention has been all too evident in the catastrophic COVID-19 pandemic: so many lives lost, livelihoods disrupted, and economies shuttered. The pandemic has been painful, and it has been humbling, shattering expectations of which countries were best prepared for such a public health emergency. Despite their affluence and seemingly better preparation, many developed economies have experienced vastly higher death rates from COVID-19 than several developing economies, something few would have predicted before the virus spread around the globe. Infectious disease outbreaks are inevitable—but we can mitigate their effects by investing in prevention and preparedness Jay Patel and Devi Sridhar BETTER PANDEMIC PREPAREDNESS TOWARD A doctor inside the emergency ward of Pikine Hospital in Dakar, Senegal. December 2021 | FINANCE & DEVELOPMENT 47 We may not know how countries will perform in the next pandemic, but we can be certain that at some point, the world will once again face a dangerous infectious disease outbreak—perhaps sooner than we think. Even if the next pandemic is inevitable, we do not need to stumble into it blindly. Instead, purposeful actions now to invest in health care and strengthen delivery systems will ensure that we are better prepared to respond to the next global health challenge. Metrics upended In 2019, the Global Health Security Index ranked the United States as the country best prepared to manage an infectious disease outbreak and the United Kingdom as the next best prepared. Two years after the pandemic erupted, the United States has endured the highest global death toll from COVID-19, with more than 700,000 deaths, while the United Kingdom has recorded seven times more deaths than the 20,000 that its government chief scientific adviser suggested in March 2020 would be a "good outcome." The Global Health Security rankings, based on more than one hundred questions about dozens of indicators and sub-indicators, were no match for the novel coronavirus. Similarly, based on a 2018 self-assessment of implementation of its International Health Regulations (IHR), the World Health Organization (WHO) deemed 86 percent of countries in Europe to be at the highest levels of pandemic preparedness, making the region the most prepared—at least on paper — to manage a novel infectious disease outbreak. In practice, Europe experienced the second highest death rate from COVID-19 of any region, at 1,294 per million people. Conversely in Africa, where the WHO considered just 15 percent of countries to be adequately prepared, fewer than 205 deaths per million have been reported (Chart 1). Predictive metrics did not capture how experience with prior viral outbreaks would help West African countries combat COVID-19. In Liberia, reforms made in the wake of the 2014– 16 Ebola outbreak to standardize and improve community-based health care proved beneficial when the first coronavirus cases were identified. In Sierra Leone, public health teams adapted targeted quarantine measures used for suspected and confirmed Ebola patients to isolate COVID-19 cases. Cross-country collaboration fostered in prior outbreaks also demonstrated value: in February 2020, Senegal's Institut Pasteur de Dakar was one of only two laboratories in Africa able to test for SARS-CoV-2, with free tests yielding results within 24 hours or less. Staff at the Dakar lab shared their expertise and offered training to Source: Operational readiness to prevent, detect,

and control a novel infectious disease outbreak reflects the percentage of countries with level 4 or 5 capacity in 2018 (International Health Regulations State Parties Self-Assessment Annual Reporting), by World Health Organization (WHO) region (adapted from Kandel and others (2020). COVID-19 deaths per million are from WHO up to September 28, 2021. Note: Labels use the WHO world region classification system. AFR = African Region; AMR = Region of the Americas; SEAR = South-East Asia Region; EUR = European Region; EMR = Eastern Mediterranean Region; WPR = Western Pacific Region. 100% 80% 60% 40% 20% 0% 0 500 1,000 1,500 2,000 2,500 Chart 1 Disconnect Preexisting pandemic preparedness metrics did not accurately reflect the regional burden of COVID-19, with many countries unable to implement their capacity. Patel, 10/4 EUR WPR AMR SEAR EMR WPR AFR SEAR EMR EUR AMR AFR Highest Lowest Lowest Highest Operational readiness to prevent, detect, and control a novel infectious disease outbreak Deaths per million up to September 28, 2021 48 FINANCE & DEVELOPMENT | December 2021 others outside Senegal, and by April 2020, 43 African countries had the capacity to effectively diagnose COVID-19. Meanwhile, some of the world's strongest health systems, including Italy's Servizio Sanitario Nazionale, and some of the largest, including Brazil's Sistema Único de Saúde, were shown to be woefully overstretched in the face of the pandemic, almost to the point of collapse. Even now, the provision of routine essential health care services remains fragile in these countries. What went wrong in countries with seemingly resilient health infrastructures? As crystallized by American physician Paul Farmer, effective health care requires four key elements: "staff, stuff, space, and systems." Amid the early escalation of community transmission, the UK government attempted to rapidly boost capacity by building seven emergency hospital facilities. It spent $736 million on these Nightingale Hospitals, which largely went unused even as existing hospital capacities neared a breaking point. The reason: adding space, stuff, and systems was futile without enough trained staff on hand. In contrast, faced with early signs of local COVID-19 transmission, countries across sub-Saharan Africa and East Asia took a more bottom-up approach toward capacity building, thereby largely avoiding the need for lockdowns in 2020. Over four decades, Thailand had recruited a large network of volunteers, which was mobilized to assist in the logistical aspects of the response, providing coverage even in the most remote areas. In Vietnam, engaging existing local governance structures facilitated effective community-based coordination of quarantines and self-isolation. In Japan, rapidly training public health nurses allowed for thorough retrospective and prospective contact tracing, helping to identify the main clusters of transmission within the first few weeks of the outbreak. Implementing supportive interventions and conferring power on local government helped many countries curb transmission of the virus and avoid harsher, more sweeping measures. Investing in prevention and preparedness The COVID-19 pandemic has made the economic case for investing in health abundantly clear. Going forward, we must view health security as an investment rather than a cost; consider that by 2025, COVID-19 will have a global economic burden of $16–$35 trillion, according to estimates from McKinsey & Company and an independent G20 panel. If better preparedness reduced this cost even modestly, the return on investment, in absolute terms, would be substantial (Chart 2). Policy differences aside, societies with a prevalence of chronic noncommunicable diseases and stark structural inequities fared poorly against the novel coronavirus. Rooting out both requires Source: G20 commitments are based on A Global Deal for Our Pandemic Age by the G20 High Level Independent Panel on Financing the Global Commons for Pandemic Preparedness and Response. The estimated economic loss from the COVID-19 pandemic is the minimum estimate from McKinsey & Company. Chart 2 The case for investment Investing in pandemic prevention and preparedness

delivers substantial returns. Patel, 10/4 WPR AMR SEAR EMR EUR AMR AMR Opportunities for G20 commitments $15 billion $16 trillion Minimum annual international financing Estimated cost of COVID-19 or $75 billion = $10 billion Minimum five-year international financing with sustained investments over subsequent years December 2021 | FINANCE & DEVELOPMENT 49 Another lesson of the COVID-19 pandemic is that science delivers when governments provide a supportive environment for it. a long-term strategic plan but would be a key step toward securing a more sustainable world. Investing in health pays dividends twice over: first, in times of acute public health emergencies, including the growing challenge of antimicrobial resistance, and second, in building healthier and more equitable societies—both essential components of health security. Fortunately, for governments seeking short-term progress within election cycles, the latter delivers swift and continuous value in everyday health care. Finland's government, for example, recognized that a good public health strategy for COVID-19 required agile and generous financing, but would offer payback from better fiscal protection and a speedier economic recovery. Another lesson of the COVID-19 pandemic is that science delivers when governments provide a supportive environment for it. Most health experts would not have described a pathogen triggering a pandemic as unprecedented but might use the term to describe the speed of scientific innovation and discovery throughout the COVID-19 pandemic. The development of multiple safe and effective COVID-19 vaccines was not the result of good luck but the fruit of decades of investment in scientific research. Governments built on their prior investments to accelerate the development and distribution of vaccines at a time when the world desperately needed therapeutic solutions. When addressing global health crises in the future, government support for science and technology, including amid periods of uncertainty, will be imperative. The COVAX Facility, intended to ensure global vaccine equity, has underdelivered on its commitments. The mechanism to procure vaccines for lowto middle-income countries lacks the financial power to bring down prices, forcing COVAX to the back of the queue and reducing it to relying on donations. To echo a quote on the cover of a past issue of the Lancet: "rich countries behaved worse than anyone's worst nightmares," hoarding excess supplies of vaccines and, in the case of Canada, ordering doses equal to 10 times its population. Building and scaling up vaccine manufacturing hubs in low-income regions would help end the acute phase of the pandemic sooner and provide an infrastructure for combating other infectious diseases. On a global level, the pandemic revealed deficiencies in health security agreements such as the IHR, which legally binds 196 countries to develop capacities to rapidly report and respond to disease outbreaks. As seen in the pandemic, many countries complied only in part, due to an incomplete awareness of the regulations or a deliberate flouting of them. Better compliance with the IHR surely would have resulted in responses that were timelier and more effective in safeguarding public health. Although the pandemic exposed its shortcomings, the IHR remains indisputably central to the global health architecture for pandemics, and when adhered to, can be meaningful in any health emergency. Adjustments are needed, especially to adopt a more nuanced alerting mechanism and empower the WHO to continually review and improve member states' compliance with the overall regime. For a revamped IHR to succeed, the WHO must have the financial support, authority, and trust needed to ensure better compliance with these potentially life-saving regulations. An increase in funding of $1 billion a year in assessed contributions for the WHO would be a start. Successes and failures in the COVID-19 pandemic have shown us what we must do to be better prepared for the next pandemic. And, as Benjamin Franklin warned, if we fail to prepare for that event, we must be prepared to fail again—and to suffer the consequences. JAY PATEL is a researcher at the Global Health Governance Programme, University of Edinburgh, where DEVI SRIDHAR is professor and chair of global public health. This article draws

3

on Devi Sridhar's forthcoming book, Preventable: The Politics of Pandemics and How to Stop the Next One. References: Group of Twenty (G20). 2021. "A Global Deal for Our Pandemic Age." Report of the High Level Independent Panel on Financing the Global Commons for Pandemic Preparedness and Response. Kandel, N., S. Chungong, A. Omaar, and J. Xing. 2020. "Health Security Capacities in the Context of COVID-19 Outbreak: An Analysis of International Health Regulations Annual Report Data from 182 countries." Lancet 395 (10229): 1047–53. McKinsey & Company. 2021. "How Might the COVID-19 Pandemic End?" July 19. 50 FINANCE & DEVELOPMENT | December 2021 PHOTO: COURTESY OF THE GLOBAL FUND The Global Fund's Peter Sands believes that economists should pay more attention to global health F&D: Early in the pandemic, you wrote "When Finance Fails," which investigated economists' failure to anticipate the COVID collapse. Why did that happen? PS: After I left Standard Chartered, I spent time as a research fellow at Harvard looking at the economics and finance of global health, particularly around pandemics. I was especially fascinated that almost no one in the financial or economic world, including the IMF, seemed to take the risk of such outbreaks seriously. Specifically, I identified 15 countries that had suffered infectious disease outbreaks and looked at the country reports published by the IMF, S&P, and the Economist Intelligence Unit two years prior and two years after those outbreaks. While outbreaks were mentioned in 63 percent of the IMF reports published afterwards, not a single report published before an outbreak highlighted the risk. And this was not unique to the IMF reports. What causes this blind spot? For one, humans, even economists, are not good at estimating low-probability, high-impact events. We either exaggerate or ignore them. People tend to examine the risks they understand, and because institutions like the IMF didn't feel comfortable with issues related to epidemiology, they didn't look at them. There was a chasm of understanding between the worlds of health and economics, both highly specialized and technical, whose people can't speak each other's language. F&D: What unique perspectives can the IMF bring to assessing the impact of such outbreaks ahead of time? PS: Relatively minor outbreaks occur regularly, but every now and then one surges, as we've seen with COVID-19. It is possible to assess a country's vulnerability to outbreaks and its ability to deal with them, just as the IMF assesses a country's ability to deal with other macrocritical challenges, such as liquidity shocks. The IMF could draw on others for the epidemiological side but look at how an outbreak could affect the economy. This requires skills and capacities that are core strengths of the IMF. F&D: Has COVID-19 highlighted the macrocritical aspects of health? Are you optimistic that institutions like the IMF will now pay more attention to them? COVID-19 took everyone, including economists, by surprise. Pandemics pose significant macroeconomic costs, but only recently have garnered the attention they deserve. This disconnect troubles Peter Sands, executive director of the Global Fund to Fight AIDS, TB and Malaria, whose background is in both finance and health. Previously, he was CEO of Standard Chartered, the lead non–executive director on the board of the UK Department of Health, and a board member of the Global Business Coalition on AIDS, TB and Malaria. In an interview with Ruchir Agarwal —head of the IMF's Global Health and Pandemic Response Taskforce, established to enhance the Fund's contributions to fight COVID-19—Sands reflects on global health, pandemics, and why economists should care. PANDEMIC LESSONS December 2021 | FINANCE & DEVELOPMENT 51 PS: If large institutions like the Fund haven't worked out that infectious diseases can have massive macroeconomic and financial effects because of COVID-19, I don't know what will convince them. It's even bigger than the global financial crisis. The pandemic revealed how transmissions between diseases and economies work, such as who wins and loses—some of which is surprising. But I don't think anybody can now

say, “If I’m going to assess future economic risks, I can ignore the threat of a potential pandemic.” F&D: From your vantage point at the Global Fund, what are the key near-term priorities to save lives and support a broad-based economic recovery? PS: The Global Fund was set up to fight the last big pandemic, HIV/AIDS, which killed nearly 40 million people. Our core strength is fighting the biggest infectious diseases. We responded to the COVID-19 crisis very quickly, making money available in March 2020. Since then, we’ve deployed about $4 billion. The Global Fund has been the primary provider of support to low- and middle-income countries for non-vaccine health elements, such as testing, PPE [personal protective equipment], and oxygen. To beat the pandemic, it is necessary to go bigger and faster. The logic of fighting infectious diseases is to hit them fast because there’s a nonlinear impact both on beating them and if you let them run rampant. A lopsided response must be avoided. Vaccines are our most potent weapon, but vaccines alone will not defeat COVID. A more comprehensive response that encompasses a wider range of elements is needed. F&D: Has the pandemic affected the world’s ability to tackle other major diseases? PS: COVID-19 is the worst thing that ever happened to the fight against HIV, TB, and malaria. The Global Fund recently published its 2020 results report; for the first time in our 20-year history, there were reverses in key results across all three diseases. To put this into perspective, in most low- and low-middle-income countries, HIV, TB, and malaria kill more people than COVID. We need a response that deals with both the direct impact of COVID and its knock-on impact on these other diseases. F&D: Could COVID-19 catalyze support for a comprehensive approach to global health, not just disease by disease but across a broad spectrum? PS: People need to be protected from a whole slew of pathogens. It makes no sense to save someone from COVID-19 only for them to die of TB. Another lesson is the value of an end-to-end perspective, with people who are involved in the deployment of new medical tools working with those developing and launching them. The third lesson is the value of time. As a banker, I heard people say, “time is money.” In the global health world, time is life. But the global health world doesn’t always work like that; it is more measured. We have responded to COVID at an unprecedented pace. We should translate that urgency into our response to other diseases. F&D: There’s been recent good news on approval of a malaria vaccine. Are you optimistic about other areas in the months and years ahead? PS: The COVID-19 experience—which broke previous assumptions about how long it takes to develop responses such as rapid diagnostic tests and vaccines—is challenging expectations about how long it takes to develop these for other diseases as well. The approval of RTS,S, the new malaria vaccine, took years, and the Global Fund put money into its development. And there are other examples. We’ve talked with people in the TB world who are
3 excited about the possibility of a vaccine in four to five years. I’ve been asking, If we can develop a vaccine in just a year for a virus we’d never seen before, why are we excited about waiting four to five years for a vaccine for a disease we’ve had for hundreds of years? We need a different sense of urgency. This interview has been edited for length and clarity. “As a banker, I heard people say, ‘time is money.’ In the global health world, time is life.” 52 FINANCE & DEVELOPMENT | December 2021 WE ARE IN THE MIDST of a third wave of COVID-19. In countries able to access vaccines, morbidity and mortality rates have fallen But in Africa, where less than 3 percent of the population is fully vaccinated, the number of cases per week is at record highs. As of November 3, 2021, there were 8.5 million confirmed cases and over 218,000 COVID-19 fatalities across the continent. The pandemic has overwhelmed health systems, taking scarce resources away from fending off concurrent epidemics and managing an already high disease burden. This burden is related to factors including rapid population growth; infectious and noncommunicable diseases; high maternal morbidity; and environmental, climatic, and ecological changes. Africa is fighting these battles

with about 3 million health care workers—that's 3 doctors per 10,000 people, compared with nearly 30 for the Americas and more than 40 for Europe. Homegrown solutions The 2014–16 Ebola virus outbreak in West Africa provided several lessons. The continent clearly needed stronger surveillance and governance systems and better national pandemic management capacity and capability—in addition to significantly more predictable funding. But to succeed, coordination, communication, and collaboration through the African Union were crucial. The Africa Centres for Disease Control and Prevention (Africa CDC) has played a pivotal role in coordinating the African Union's continental response strategy during the current pandemic. The strategy was released less than six weeks after the first confirmed case on the continent and created several unprecedented mechanisms. The pan-African Partnership to Accelerate COVID-19 Testing was launched by the African Union Commission (AUC) and Africa CDC in April 2020. Because of the vaccine gap, African countries have largely relied on testing to get ahead of the virus. Thanks to the partnership, the number of countries with testing capacity increased from 2 to 43 in just three months. More than 90 million test kits were procured and thousands of lab workers trained. The African Union partnered with Africa CDC, the United Nations Economic Commission for Africa, and the African Export-Import Bank to create a medical supplies platform. The platform makes it easier for governments to locate and purchase vital personal protective equipment by acting as a one-stop shop for procurement, which has improved Africa's bargaining power while supporting African manufacturers. The AUC and Africa CDC also launched the Trusted Travel Platform to simplify the verification of COVID-19 test results and public documentation for travelers. Beyond COVID-19, the system could also be used for the African Continental Free Trade Area. PHOTO: COURTESY OF JOHN NKENGASONG A New Public Health Order for Africa Regional solutions are what we need to get us through the next pandemic John Nkengasong POINT OF VIEW December 2021 | FINANCE & DEVELOPMENT 53 Regional institutions have an important role to play that goes beyond backstopping countries. The African Vaccine Acquisition Trust was established to complement initiatives such as COVAX—a global risk-sharing mechanism for pooled procurement and equitable distribution of COVID-19 vaccines. The Trust has secured enough vaccine doses to cover one-third of the African population. The case for regionalization The examples mentioned show that regional institutions have an important role to play that goes beyond backstopping countries. They can innovate and help adapt responses to regional needs, and are close enough to decision-makers to secure the required political support—all important elements of success. Our work at Africa CDC is guided by the need for a new public health order for Africa and a focus on five core areas for the continent's mid- to longer-term health security: • Strong regional institutions to guide priorities, coordinate policies and programs, and drive standard-setting and disease surveillance; • Local production of vaccines, therapeutics, and diagnostics to drive down procurement costs and increase response speed; • Investment in the public health workforce and leadership programs; • Strong, high-level partnerships, including between donors and governments and the public and private sectors and with public health institutions; and • A greater role for regional organizations in pandemic governance, by decentralizing institutions and through regional representatives in key agencies to ensure that the specificities and needs of each region are considered in the planning of central mechanisms such as surveillance systems. This new public health order requires more predictable, long-term funding. Funding needed for national public health institutes differs widely based on size, function, and country, but a starting budget of at least $20 million is required. Most important, tens of billions of dollars will be needed to train nurses, physicians, epidemiologists, and other health care workers. Continental

manufacturing of vaccines, diagnostics, and therapeutics will also require up-front investments in infrastructure, materials, and staff. These calculations do not include the additional funding needs identified on a global level. For example, support for global institutions such as the World Health Organization; access to vaccines, diagnostics, and therapeutics; global surveillance and alert systems; and rapid surge funding for (early) response activities. While there should be more domestic funding, it will not be sufficient for the needs of low- and many lower-middle-income countries, at least not in the foreseeable future. It must be bolstered by favorable financing options, supported by strong partnerships and investments in pandemic preparedness and response, and backstopped by a fund that can pay for surge expenses as needed. Both the Independent Panel for Pandemic Preparedness and Response and the G20 High Level Independent Panel on Financing the Global Commons for Pandemic Preparedness and Response recommend a global fund. The G20 panel estimates that it will cost at least $75 billion over the next five years to fill gaps in pandemic prevention and preparedness. People-centered health systems The continuing threat of COVID-19, the effort to rebuild what has been lost over the past year and a half, and the task of ensuring that the next pandemic is managed more effectively require a fundamental rethink of our approach to global public health. We need people-centered health systems that are inclusive. Equity starts by regionalizing health systems so that when a crisis hits, regions have the capacity and ability to respond. COVID-19 is a tragedy whose lessons are too significant to ignore. If we take those lessons learned and translate them into a new public health order, we can lessen the effects of future pandemics on our lives and livelihoods. JOHN NKENGASONG is director of the Africa Centres for Disease Control and Prevention. POINT OF VIEW The rising incidence of dementia around the world calls for global collaboration and decisive financing Nathaniel Counts, Arindam Nandi, Benjamin Seligman, and Daniel Tortorice DEMENTIA STORM T he world has been appropriately preoccupied with the COVID-19 pandemic for nearly two years. But this immediate crisis should not stop us from preparing for another impending public health threat: Alzheimer’s disease and related dementias. Without investment in more effective and accessible treatments and prevention strategies, dementia will slow economic growth and undermine global health and economic equity. Nations must act now to prepare for this underappreciated global health challenge. Dementia results in significant declines in not only cognitive performance but also overall psychological and physical functioning, inevitably interfering with an individual’s ability to remain independent. The conditions grouped together under Alzheimer’s disease and related dementias (Alzheimer’s dementia, vascular dementia, Lewy body dementia, and frontotemporal dementia) have different underlying pathologies but share important features. All are progressive and ultimately fatal, and all are irreversible and lack treatments. Symptoms of Alzheimer’s disease and related dementias are relatively rare in people younger than 50, but their prevalence practically doubles every five years thereafter. The first step in addressing a problem is understanding its scope. A common measure of the burden of disease is disability-adjusted life years, which accounts for the impacts on both functioning and life expectancy. Though this is an imperfect measure that can reinforce ableism and ageism, it still provides a chilling snapshot of the damage wrought by dementia. Dementia is currently the sixth greatest contributor to disability burdens globally among people ages 55 and up. The burden of disability escalates with population aging: dementia contributed 33.1 million disability-adjusted life years in 2019, and if the burden continues to grow at the same rate as in the past decade, it will contribute 55.1 million in 2030, 81.1 million in 2040, and 115.8 million in 2050. Ultimately, the global burden of dementia will more than triple over the next 30 years and it will

become the fifth greatest contributor to global disability in this age group (Bloom and others 2021). Worse yet, the center of gravity for the global disease burden of dementia is shifting from advanced economies to low- and middle-income countries, reflecting changes in the global distribution of older adults. Lower-middle-income countries will account for nearly 30 percent of the growth in dementia-related disability-adjusted life years from 2019 to 2050. Upper-middle-income countries will also account for a growing share (12 percent growth during 2019–2050). By contrast, the share in advanced economies will decrease by 30 percent. By 2050, poorer countries are projected to contribute more to the global disease burden of dementia than wealthier ones (Bloom and others 2021). Dementia's economic burden In addition to the human toll, dementia imposes a substantial economic burden. Researchers have made several efforts to estimate the economic and societal burdens of this group of diseases and forecast the potential future costs. We selected five representative studies that forecast the economic or societal burden of dementia to illustrate the predicted burden (see table). All the studies forecast substantial increases in the societal and economic burden of dementia in the coming decades. Many find that the burden will more than double between 2020 and 2050, with one study forecasting a nine-fold increase. The per capita estimates of forecast economic and societal burden vary depending on the costs included, the methods used to quantify and extrapolate those costs, and the context in which the burden was estimated. All studies examined direct medical costs, such as outpatient and inpatient care and long-term care costs; some also included nonmedical costs, such as transportation to appointments. Many studies also tried to include costs associated with informal caregiving. These findings of dementia's growing economic and societal burdens do not account for some key aspects of their full extent. For example, none of these studies examined the effects of dementia on productive activities outside of the market (for example, uncompensated childcare that older adults provide) or take into account the extent to which individuals value averting dementia. The actual social and economic burden is thus likely to be larger than the studies predict. These impacts of dementia impede economic growth. The findings above indicate that the rising burden of dementia will deplete the labor force and reduce productivity as individuals take on informal caregiving roles for those with dementia, as well as reduce the capital supply available to invest elsewhere as dementia care consumes substantial resources. These effects will impact global economic equity as the burden begins to shift to lower- and middle-income countries. Inadequate funding Given the growing economic and societal burden of dementia, global investment in its treatment, supportive care, and prevention is seriously lacking. Cancers have more than 50 times as many interventional clinical trials registered on ClinicalTrials. gov as dementia, even though the latter contributes approximately eight times more to disability. If dementia received investments comparable to cancer, it would likely initiate a cascade of much-needed treatment breakthroughs. Funding for addressing dementia care is, unfortunately, inadequate. Multiple randomized controlled trials demonstrate the benefits of interdisciplinary, team-based care for caregivers and patients. Despite the extensive evidence of their benefit, these approaches to mitigating the costs of dementia are under-implemented. Wider implementation may be hampered by fee-for-service health care payment models, which undervalue team-based care. In terms of research and development (R&D) for new treatments, dementia has one of the highest failure rates in clinical development. An analysis of 150 trials completed between 1998 and 2017 for Alzheimer's disease found 146 failures; only 4 were DEMENTIA STORM ART: ISTOCK / FRANCESCOCH; MILANTE; MAXIPHOTO 56 FINANCE & DEVELOPMENT | December 2021 approved by the US Food and Drug Administration (PhRMA 2018). This equates to a 2.7 percent success rate, while the success rate of drug development programs overall (those

eventually leading to FDA approval) has been pegged at 13.8 percent (Wong, Siah, and Lo 2019). The disease process for dementia is still not well understood, which could also be holding back R&D. Moreover, while hundreds of candidate therapies demonstrate effectiveness in animal models, the findings do not seem to translate well to humans. R&D is also not well coordinated globally, and data sharing has been limited. Finally, clinical trials for dementia are often prohibitively expensive because of the difficulty in recruiting participants. Learning from COVID-19 But there are lessons to be learned from the COVID-19 pandemic, which has demonstrated the need for greater planning to escape the woefully suboptimal cycles of neglect and panic: neglecting health challenges until they are upon us, and then panicking to belatedly address them. The growing cost of dementia Five studies forecast the rising burden of dementia on society and the economy. Article AD/Dementia Country Types of Costs Total Costs Forecast (2020 US$, billions) Per Capita Forecast Costs (2020 US$) Cimler and others (2019) AD European Union Direct medical costs (inpatient and outpatient costs, AD-related treatment), long-term care, informal care costs (opportunity cost) 2015: 281 2030: 510 2040: 636 2050: 766 2060: 862 2070: 906 2080: 933 2015: 553 2030: 988 2040: 1,239 2050: 1,511 2060: 1,735 2070: 1,857 2080: 1,935 Jia and others (2018) AD & Dementia China/Global Direct medical costs (inpatient, outpatient, out-ofpocket costs) Direct nonmedical costs (social sector costs, formal long-term-care fees, nourishment) Indirect costs (opportunity cost, caregiver mental health, and patient comorbidities) AD Costs China 2015: 183 2020: 272 2030: 554 2040: 1,092 2050: 2,064 Dementia Costs Global 2015: 1,046 2020: 1,452 2030: 2,774 2040: 5,274 2050: 9,959 AD Costs China 2015: 571 2020: 820 2030: 1,585 2040: 2,979 2050: 5,439 Dementia Costs Global 2015: 3,259 2020: 4,388 2030: 7,933 2040: 14,388 2050: 26,247 Sado and others (2018) Dementia Japan Direct medical costs (inpatient and outpatient costs) Formal long-term-care costs, informal care costs (mixed replacement cost and opportunity cost) 2015: 144 2020: 168 2030: 206 2040: 221 2050: 219 2015: 1,129 2020: 1,325 2030: 1,704 2040: 1,947 2050: 2,071 Wimo and others (2017) Dementia Global Direct medical costs Direct social care costs Informal care costs (opportunity cost) 2015: 893 2030: 2,180 2015: 2,784 2030: 6,246 Hurd and others (2013) Dementia United States Care purchased in marketplace (out-of-pocket costs, Medicare, long-term-care assistance) Informal costs (replacement cost or forgone wages of caregivers) Replacement Cost 2010: 385 2020: 456 2030: 646 2040: 914 Forgone Wages 2010: 318 2020: 377 2030: 534 2040: 757 Replacement Cost 2010: 1,244 2020: 1,377 2030: 1,847 2040: 2,493 Forgone Wages 2010: 1,029 2020: 1,140 2030: 1,528 2040: 2,066 Sources: As cited in the table. Note: AD = Alzheimer's disease. All costs are adjusted to 2020 US dollars and calculated as per capita costs based on the populations in the region. Because of differences in discount rates, not all forecasts may be directly comparable.

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 Unlike COVID-19–type pandemics, which are characterized as low-probability and high-visibility, the gathering storm of dementia is high-probability and low-visibility. COVID-19 showed that the global community is able to tackle the most complex research challenges rapidly and effectively when the economic peril of inaction is obvious and we invest sufficient resources. Health care systems worldwide need to begin reconsidering their approach to delivering care to people with dementia. Support for interdisciplinary team-based care for patients and families living with dementia should be a priority, especially in high- and middle-income countries. Disease management programs, which implement standardized approaches to delivering and coordinating care for people with particular chronic diseases, and innovative financing mechanisms (for example, value-based or outcome-based contracting) are examples of how such care can be scaled up in many settings. With respect to the development of novel therapies, governments of advanced economies must lead an effort to ramp up spending on dementia. These countries

currently bear most of the economic and societal costs of dementia because of their populations' age structure and thus have the most to gain in the short term. Increased investment would also bolster their economies, offering additional financial benefits. Advanced economies should invest in three areas to boost dementia R&D: direct funding (especially basic research); stronger incentives for private investment in R&D; and support for patient access to the fruits of R&D, including the absorption of patient costs—particularly in low- and middle-income countries. This support may extend to development of the health care infrastructure. As part of any such initiative, governments of advanced economies should build a global R&D ecosystem that can develop necessary clinical trial infrastructure and repositories of biological samples (biobanks). These governments should encourage investment in many simultaneous drug development projects, which, by diversifying across projects, would mitigate the extreme risk of a lone development project. The necessary capital could be raised through the establishment of a megafund with a government guarantee on the principal investments. Investments in the megafund could work like bond financing: investors get their original investment back plus interest from the proceeds of successful drug developments (Fagnan and others 2013). Such investments are critical to improve global economic equity. Informal caretaking is a large part of the reality of living with dementia, particularly as the disease progresses. Family members often perform that role, and it is intense, difficult, and often heartbreaking work. Women typically bear a disproportionate burden of caregiving in many countries, halting their progress toward equity in the labor force. Equity is particularly relevant in low- and middle-income countries, as many of the risk factors for dementia are associated with systemic disadvantages (including air pollution and lack of access to education or nutritious foods). The economic burden is thus concentrated among those already in the most challenging financial situations, feeding the cycle of poverty. Rich-country efforts to link, scale, and invest from richer countries can help the poorer ones realize their full productive capacity in the coming years. 'What? So what? Now what?' In sum, the problem is that dementia is gradually becoming an overwhelming societal burden. Why does this matter? In addition to the enormous health and social burden, dementia is an economic nightmare about to metastasize as the world, especially poorer countries, experiences unprecedented population aging. How do we address this problem? We need optimal—that is to say, massive—investments in care, prevention, and R&D, led by advanced economies that incentivize private investment and prioritize poorer economies' access to the dividends. It is not just the humanitarian thing to do—it also makes eminently good economic sense. NATHANIEL COUNTS is senior vice president for behavioral health innovation at Mental Health America, ARINDAM NANDI is associate II at the Population Council, BENJAMIN SELIGMAN is clinical instructor at UCLA's David Geffen School of Medicine, and DANIEL TORTORICE is an associate professor at the College of the Holy Cross. This article was written by the Data for Decisions, LLC, dementia research team, which comprises David E. Bloom, Janina Broker, Simiao Chen, Rachael Han, Jessica Klusty, Sabrina Malik, and Daniel V. Vigo, in addition to the four listed authors. References: For complete references cited in the article and table, please see F&D Online at www.imf.org/fandd The right actions today will ensure that sub-Saharan Africa thrives in a post-COVID world Abebe Aemro Selassie THE AFRICAN CENTURY PHOTO: IMF/ESTHER RUTH MBABAZI F ast-forward to 2081. The demographic boom currently unfolding in most sub-Saharan African countries will likely have transformed many of the region's economies into the largest and most dynamic in the world. Wishful thinking? Perhaps. But 30 to 40 years ago, not many would have thought that possible of China, India, Indonesia, or Turkey. Three factors will have an influential role in making this vision materialize: • The demographic

transition that is underway: By 2050, many sub-Saharan African countries will be among the few with a rising working-age population. Much investment and consumption demand will follow factors which are certain to entice considerable innovation. • The ongoing digital revolution—which offers much scope for the diffusion of know-how, new 58 FINANCE & DEVELOPMENT | December 2021 Daily life in Kampala, Uganda. December 2021 | FINANCE & DEVELOPMENT 59 business opportunities, and more efficient service delivery. • How effectively the region's economies deal with the transition to a low-carbon economy and the adverse consequences that climate change is set to unleash. This future is hard to envision now amid the unprecedented challenges of the pandemic. But it is one within reach given the region's tremendous potential and is certainly the goal that needs to anchor policies. The very near-term challenges are undeniable. Vaccination rates lag significantly behind those of high-income countries, averaging about 2½ percent of the population across sub-Saharan Africa by early October 2021. Most countries in the region have limited fiscal space to address investment needs, and near-term growth prospects remain below pre-pandemic projections. Although the current focus is rightfully placed on addressing these near-term challenges, our priorities should not lose sight of countries' long-term potential. Transformative economic and structural reforms, coupled with significant external concessional financing, will be necessary to recover from the pandemic and maximize long-term potential. Making the most of the demographic dividend The population of sub-Saharan Africa is projected to double from 1 billion to 2 billion by about 2050. This will account for half of global population growth, with the working-age population growing faster than any other age group. These projections—while not uniform across the continent—should be placed in the context of the opposite trend in advanced economies, which typically see aging populations, an inverted population pyramid, and a reduction in population once immigration is excluded. This trend represents perhaps the region's single greatest opportunity. It embodies a growing pool of human talent and ingenuity coupled with large market size—historically important drivers of economic dynamism. This, however, is not a given and will require astute policy choices to ensure that the potential is realized. Investment in human capital will be critical. While country circumstances differ across the region, this means mostly increased high-quality educational opportunities for a growing population, both at the primary and secondary levels, as well as developing tertiary education to meet the demands of growth sectors. It also means expanding investment in health care, including broader access to a variety of vaccines (potentially through regional production hubs), ensuring widespread access to at least a minimum level of health services, and family planning. Accelerating health and education provision won't be easy. Infrastructure needs to be built. Teachers, doctors, and

other service providers need to be trained, and the trainers themselves must be trained. Given the speed of population change in many countries, the challenge will only increase if authorities delay. Multiyear plans will be vital, balancing the trade-off between investing in ramping up services to capacity against prioritizing their provision in the near term. These investments are even more critical during a COVID-19 recovery. The pandemic has increased pressure on health care facilities in most countries in Africa. Meanwhile, young people have missed out on education due to social distancing and low capacity for distance learning given limited access to digital communication tools—particularly in rural areas, where many people work. Closing gender gaps in access to education and job opportunities would also help the demographic transition (through lower fertility) and boost productivity. Training the next generation is not enough. New job entrants must be matched with job opportunities; the growth of good jobs must not only expand to encompass a greater share of the existing population, it must also keep up with a relentless increase in new job seekers. These challenges can be met by unleashing the potential of the private sector. Policymakers should

cultivate a growth-friendly business climate and promote private sector investment. Doing so would catalyze large incentives for capital accumulation to complement the increasing labor supply. Our priorities should not lose sight of countries' long-term potential. 60 FINANCE & DEVELOPMENT | December 2021 A Partnership for 60 Years This year marks the 60th anniversary of the IMF's African Department. Founded in 1961, 17 years after the Bretton Woods conference, the department's creation responded to the needs of the wave of newly independent African countries. Over the years, the IMF's toolkit has undergone several major evolutions, moving from short-term balance of payments support to more protracted challenges, greatly increasing access to concessional financing, and ramping up capacity development efforts. The Fund's engagement with the region has never been greater than during the COVID-19 crisis, with nearly $27 billion in financial assistance provided to 39 African countries. Three-quarters of this lending came from the Poverty Reduction and Growth Trust—the IMF's vehicle for zero-interest loans to low-income countries. Digitalization in Africa The global diffusion of digital technologies promises new opportunities. Digital reforms and infrastructure will help the region to leapfrog—boosting resilience and efficiency, expanding access to global markets, improving public service delivery, increasing transparency and accountability, and fostering the creation of new jobs. Digitalization provides opportunities to improve both government efficiency and transparency (and hence governance). Examples of the former include offering services such as online tax filing and business creation, introducing computer systems into customs administration, and providing social assistance through mobile money. Transparency can be improved by publishing information online, e-participation, and automation of service delivery (reducing in-person contact that could generate corruption). These opportunities could build trust, increase revenue collection, and improve spending quality. Rapidly advancing technology in automation, artificial intelligence, and communications is also dramatically changing the nature of the private sector. The pace of change may mean that historically prevalent development paths—following a ladder of development that starts with light manufacturing and advances to increasing levels of sophistication—are no longer viable or desirable. Instead, services such as business process outsourcing, e-commerce, and fintech are likely to become increasingly important. Fintech, for example, could raise growth and promote financial inclusion by providing services to customers previously unserved, but it should be balanced against risks to financial stability. More broadly, digitalization promotes entrepreneurship by allowing firms to grow rapidly with less physical capital and a limited geographic footprint. Nevertheless, automation and artificial intelligence could generate downward pressure on the labor share of income if they replace rather than enhance labor, hence potentially reducing labor demand. As with the demographic dividend, investment in human capital is critical. Education will need to integrate information technology into students' learning when they are very young—vocational and tertiary education must emphasize the technical skills necessary to ride the wave of digitalization. One aspect of this wave may be helpful in this regard: online education. Access to these resources could help young people in sub-Saharan Africa reach beyond the limits of their national education structure as it develops over time. Without investment in key infrastructure, the impact of digitalization—even in countries that are more advanced in this area—will be limited, and there is a risk that the fruits will be enjoyed by the elite instead of generating the broad-based benefits expected by all. Basic infrastructure to generate power and provide reliable electricity to households at reasonable prices is a vital prerequisite. Further, access to high-speed internet for a wide section of society will necessitate undersea cables with the capacity for sufficient bandwidth and telecommunications infrastructure that can spread the connection across the country. This should be complemented by a

well-regulated telecommunications sector that charges competitive and accessible prices to consumers. Managing climate change risks Climate change poses a great threat to many countries in the region. Impacts vary across countries: some are facing droughts; others rising sea levels, cyclones, and floods; and most are dealing with rising temperatures and rainfall anomalies. But one thing sub-Saharan African countries have in common is limited climate resilience and coping mechanisms, along with reliance on rain-fed agriculture. Consequently, climate change is weighing December 2021 | FINANCE & DEVELOPMENT 61 Seizing on these transformative changes requires significant investment in both human and physical infrastructure. on economic activity in sub-Saharan Africa more than elsewhere. Accelerating adaptation to climate change is key to tackling these challenges. This means targeted investment in infrastructure, people, and coping mechanisms, which not only raises resilience to climate change but boosts productivity and reduces inequality. Consider better and more widespread irrigation to protect crops from drought and more robust buildings and drainage to protect from cyclones. Investing in health care and education makes people more physically resilient and better informed to deal with climate risks. Social assistance and access to finance help people build more robust homes and invest in climate-smart agriculture, health care, and education. These also act as buffers that help people and businesses cope after a shock. Good macroeconomic policies —increasing fiscal space, enhancing economic diversification, and pursuing exchange rate flexibility—will also limit the impact of climate shocks. The global transition to low-carbon economies creates additional challenges. The region’s oil and gas exporters will face lower revenues and less related investment. Consequently, rapid economic diversification of these economies that raises incomes and yields inclusive job opportunities for their rapidly growing populations is crucial. At the same time, reduced global supplies of these resources and pressure to rely on green energy will also call for a transition of the whole region to greener industrial activity and energy generation—through policies spanning from financial regulations to large-scale investment in renewable energy such as solar and wind power. Here, facilitating technology transfers from more advanced economies will be critical, especially in the context of rapid economic expansion that will accompany rapid population growth. Pressure to preserve and enhance the region’s carbon sinks and reservoirs, at the cost of potential logging and mining opportunities, will also rise. Finding the financing Seizing on these transformative changes requires significant investment in both human and physical infrastructure. However, COVID-19 has left many sub-Saharan African countries with limited fiscal space and higher debt burdens. Authorities must intensify efforts to develop fiscal revenues, undertaking necessary reforms to ensure efficient tax policy, comprehensive public financial management, and transparency and good governance. Multilateral development banks and development partners must also step up financing efforts with grants and concessional loans where possible. Rechanneling Special Drawing Rights from advanced economies with strong balance of payments positions may provide longer-maturity loans to aid in this regard. The increase in debt across the continent during the past two years places much greater concern on the uptake of new debt. It is more important than ever that countries ensure a good return on investments financed with debt and target high-quality projects backed with comprehensive feasibility studies and robust and transparent public procurement. Playing the long game Although the short-term response to COVID is the clear priority, effectively managing the recovery should keep long-term trends in mind. The region faces challenges, but it also has great potential for growth in the coming 60 years. Countries should make the most of this potential by increasing access to fiscal revenues and maximizing the return on targeted investment in both physical— including basic infrastructure that provides greater access to electricity and is weather resilient—and human capital. International partners

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should play their part in supporting these efforts by providing technical assistance and financing. Despite the widespread adverse consequences of the pandemic, countries in the region must take this opportunity as a catalyst for reforms that will provide the foundation for a century of inclusive growth for the African continent. ABEBE AEMRO SELASSIE is director of the IMF's African Department. 62 FINANCE & DEVELOPMENT | December 2021 BACK TO BASICS What Are Global Public Goods? Global institutions must coordinate to preserve the goods that benefit us all Moya Chin THE COVID-19 PANDEMIC, refugee crises, climate change—these global problems have exposed the need for public goods that are likewise global. What are public goods, and how can they be supplied globally? Public goods are those that are available to all ("nonexcludable") and that can be enjoyed over and over again by anyone without diminishing the benefits they deliver to others ("nonrival"). The scope of public goods can be local, national, or global. Public fireworks are a local public good, as anyone within eyeshot can enjoy the show. National defense is a national public good, as its benefits are enjoyed by citizens of the state. Global public goods are those whose benefits affect all citizens of the world. They encompass many aspects of our lives: from our natural environment, our histories and cultures, and technological progress down to everyday devices such as the metric system. No one can be prevented from using the metric system, and whenever someone uses it its usefulness to others is not diminished. The nature of their benefits sets public goods apart from the private goods we see in the store or the club goods we can pay a fee to access, but this also means they cannot be found in a store nor accessed via a simple fee. Creating public goods is much more difficult than supplying private goods, and providing global public goods poses a unique challenge. Why are public goods undersupplied? Simply put, incentives are lacking. For a profit-seeking individual to supply a public good, the expected benefit to that individual must exceed the cost. For public goods, the opposite typically applies for several reasons: • Individuals cannot be charged for their use. Because of the nature of public goods, the supplier cannot prevent individuals from using them. Once supplied, all people can use a public good whether or not they contributed to its provision. This is known as the "free rider problem." • For most public goods, the benefit to each individual is small. This is often the case when one person's use of a good affects others. These "spillovers" or "externalities" can render the benefit for any single individual too small (if the spillovers are positive) or too large (if the spillovers are negative). This is the case for goods such as global health—by choosing to be vaccinated, a person stays healthy (individual benefit that may be small for those not at risk) and prevents others from getting sick (a large positive spillover). • For many public goods, the benefits are realized far in the future while the costs are realized today. People tend to overvalue the present relative to the future. This short-sightedness can distort the costs and benefits from goods such as education (the cost of schools is paid today, while the benefit is realized when the students become adults) and the natural environment (the cost of mitigating climate change is paid today, while the benefit is mostly for future generations). For these reasons, public goods will tend to be undersupplied if left to the private sector. To date, the solution to the problem of providing public goods has been coordination, which ensures that everyone contributes to the provision of a public good and that the costs and benefits are weighed without distortion. Formal institutions, ART: ISTOCK / RASTUDIO December 2021 | FINANCE & DEVELOPMENT 63 BACK TO BASICS notably governments, are the main coordinators in the provision of local and national public goods. Governments are most successful in providing public goods when they have strong institutions. By enforcing regulation and taxation, governments mobilize resources to provide public goods and eliminate the free rider problem. An inclusive government values the welfare of all its citizens—those within its

borders and across generations. Such governments are able to realize the full societal benefit of public goods (the sum of individual benefits as well as the spillovers) and to balance the needs of present and future citizens. Are global public goods different? Theoretically, global public goods are no different from local or national public goods. They are nonexcludable and nonrival. They are characterized by free rider problems, spillovers, and short time horizons. Why, then, are more local and national public goods provided than global public goods? Why is there more funding for national defense than for combating global climate change? The failures of governments that underprovide public goods are amplified when it comes to global public goods. Global institutions—where they exist—often lack the legal authority to enforce regulation and taxation or the institutional capacity to coordinate the needs of all citizens in the world and across generations. The coordination challenge is also bigger. Global institutions deal with national governments, as opposed to individual citizens. Many national governments struggle to provide public goods even within their own countries. The ratification of the Paris Agreement was both a success and a testament to the limitations of international coordination. By making allowances for countries' different needs and responsibilities, the agreement takes into account the welfare of each country. The commitment by developed economies to provide $100 billion in climate financing each year mobilized resources for emerging market and developing economies. However, the withdrawal of the United States in 2020 and the chronic underprovision of climate financing highlight the agreement's limited ability to enforce contributions and to eliminate the free rider problem. Supply and demand It is not inevitable, however, that the world will continue to fail to provide global public goods. Many institutions that provide public goods today did not appear on their own, but formed in response to demand. Public education in the United States developed in response to citizen demands in a technologically advancing world. The IMF was established after the Great Depression and World War II as countries recognized the need to promote global financial stability. There is reason to believe that the demand for global public goods is growing. Whether it is trade, capital flows, or migration, the world is far more interconnected now than it was in 1945, when many global institutions such as the United Nations, IMF, World Bank, and World Health Organization were founded. The importance of global public goods in our everyday lives becomes more salient with each new crisis—COVID-19 has increased demand for global public health, refugee crises for global peace, climate change for sustaining the global environment. These crises require a global framework that recognizes a shared obligation, clearly delineates each country's responsibility, and enforces these commitments. For global institutions to foster coordination, they need comprehensive governance structures to ensure that decisions are legitimate and

3 represent all present and future citizens of the world. If the momentum that is building today can be harnessed and mobilized to build this global framework, the provision of global public goods may become a reality. MOYA CHIN is an economist in the IMF's Institute for Capacity Development. Public goods Environment, culture, technology, public health Club goods Toll roads, internet, movie theaters Common goods Natural resources, judicial system Private goods Food, medicine, books Excludable Nonexcludable Rival Nonrival Note: Goods listed are examples; this is not an exhaustive list. Soldiers in ancient Greece would send secret dispatches by wrapping a strip of parchment around a staff and writing across it. Their messages could be deciphered only by someone with a staff of the same thickness. It is one of the earliest examples of cryptography. Today's secrets, such as internet communication, digital banking, and electronic commerce, are protected from prying eyes by powerful computer algorithms. Yet these hitherto impenetrable cryptographic codes could soon be history. Quantum computers can reach a level of optimization that would crack many of today's encryption keys in

less time than it takes to generate them using conventional digital computers. Financial institutions should future-proof their cybersecurity systems without delay. Failure to do so will imperil financial stability. A quantum revolution Quantum computing is the use of quantum phenomena such as superposition and entanglement to perform computations. The basic unit of a quantum computer is the quantum bit (or qubit, for short). It is typically realized by the quantum properties of subatomic particles, such as the spin of electrons or the polarization of a photon. Whereas each binary bit used in today's digital computers represents a value of Quantum Computing's POSSIBILITIES AND PERILS Quantum computers could crack the cryptography that underpins financial stability José Deodoro, Michael Gorbanyov, Majid Malaika, and Tahsin Saadi Sedik Physicist Nicolas Pulido stands at a prototype of a quantum computer in Brunswick, Germany. December 2021 | FINANCE & DEVELOPMENT 65 PHOTO: GETTY IMAGES / PICTURE ALLIANCE / JULIAN STRATENSCHULTE either zero or one, qubits represent both zero and one (or some combination of the two) at the same time. This phenomenon is called superposition. Quantum entanglement is a special connection between pairs or groups of quantum elements. Changing the state of one element affects other entangled elements instantly—regardless of the distance between them. Increasing the number of qubits delivers an exponential rise in calculation processing speed. Two traditional binary bits are needed to match the power of a single qubit; four bits are required to match two qubits; eight bits are needed to match three qubits; and so on. It would take about 18 quadrillion bits of traditional memory to model a quantum computer with just 54 qubits. A 100 qubit quantum computer would require more bits than there are atoms on our planet. And a 280 qubit computer would require more bits than there are atoms in the known universe. Quantum computers have the potential to massively out-process digital computers that follow classical laws of physics. William Phillips, the Nobel Prize–winning physicist, has compared the leap from today's technology to quantum with that from the abacus to the digital computer itself. Until recently, this so-called quantum advantage or quantum "supremacy" was just a theory. In 2019, however, Google used a quantum computer to perform a specific computation task in just 200 seconds. The same task would, the company said, have taken the most powerful digital supercomputer at that time 10,000 years. The possibilities Complex computational tasks are like finding the way out of a maze. A traditional computer would try to escape by following every path in sequence until it reached the exit. Superposition, by contrast, allows a quantum computer to try all the paths at once. This drastically reduces the time to find a solution. By solving problems with more accuracy and speed than digital computers, quantum computers have the potential to accelerate scientific discovery and innovation, revolutionize financial market modeling and simulations, and empower machine learning and artificial intelligence. They could be used to model subatomic particles, molecular interactions, and chemical reactions. This could revolutionize chemical engineering and material science and allow the design of new materials, such as solid-state batteries. Quantum computers could also help us understand climate change. Quantum computers could transform the financial system, too. They could perform more accurate Monte Carlo simulations—used to predict the behavior of markets through pricing and risk simulations—almost in real time. There would be no need to simplify these models with unrealistic assumptions. Quantum computers could also solve optimization tasks—such as allocating capital, determining portfolio investments, or managing the cash in ATM networks—in a fraction of the time it takes digital computers. Quantum computers could also speed the training of machine learning algorithms. The time it takes digital computers to do this increases exponentially with each dimension that is added. Not so with quantum computers. And the perils There are risks, however. The computing power of these mighty quantum

machines could threaten modern cryptography. This has far-reaching implications for financial stability and privacy. Today's cryptography is based on three main types of algorithms: symmetric keys, asymmetric keys (also known as public keys), and hash functions. With symmetric keys, the same key is used to encrypt and decrypt a message. Asymmetric cryptography uses a pair of related keys (one private and the other public). A message encrypted by one key can be decrypted only by that key's pair. These algorithms are widely used for digital authentication, digital signatures, and data security. Hash functions convert digital input into a unique set of bytes of fixed size. They are used to store passwords securely and to support digital identities. These cryptographic algorithms have mostly succeeded in safeguarding data. Even today's most advanced digital supercomputers and cryptanalysis techniques cannot break them fast enough. However, quantum computers will be able to solve hard mathematical problems exponentially faster than digital supercomputers. This will make Quantum computers have the potential to massively out-process digital computers that follow classical laws of physics. 66 FINANCE & DEVELOPMENT | December 2021 asymmetric cryptography obsolete and will weaken other cryptographic keys and hashes. Theoretically, a fully functioning quantum computer could break an asymmetric key in a matter of minutes. Public keys are especially vulnerable because most of them are based on the factorization problem: it is hard for digital computers to find two prime numbers from their product. Quantum computers, by contrast, can do it effortlessly. Asymmetric keys are widely used to secure communications over the internet. Successful attacks against these algorithms would compromise connections used by the financial system, including mobile banking, e-commerce, payment transactions, ATM cash withdrawals, and VPN communications, to name just a few. Vulnerable applications that rely on public-key cryptography also include popular digital assets such as Bitcoin and Ethereum, as well as password-protected web applications. The best known of these protocols, HTTPS, is used by 97 of the world's top 100 websites. For some applications, it may be too late already. Any information assumed secure today could be captured and stored to be deciphered later once sufficiently powerful quantum computers are created. In fact, almost any encrypted personal or financial message sent and stored today could be deciphered retroactively by a powerful quantum computer. Most financial institutions and regulators are not yet alert to these novel risks. Race against the machine The race to develop new quantum-safe encryption standards and algorithms has begun already. In the United States, the National Institute of Standards and Technology is running a competition to develop quantum-safe encryption algorithms. It hopes to announce a winner by 2024. The European Telecommunications Standards Institute is also taking a lead. These efforts are

3 feeding into the activities of other standard-setting bodies. Because of retroactive risks, however, financial institutions have a narrow window to implement the new standards. Financial institutions must take immediate steps to prepare for a cryptographic transition. They should start by assessing retroactive and future risks from quantum computers, including from information that may already have been captured and can be exploited years later. Financial institutions should then develop plans to migrate current cryptography to quantum-resistant algorithms. This includes taking an inventory of public-key cryptography they use themselves as well as that used by any third-party suppliers. Vulnerable algorithms will need to be transitioned to post-quantum cryptography. Financial institutions should also build cryptographic agility so that algorithms can be upgraded smoothly. Experiences of algorithm replacements, even though much simpler than the transition to post-quantum standards, show that they can be extremely disruptive. They often take years or decades to accomplish. The IMF has an important role to play in raising the awareness of its members about the risks to financial stability from quantum computers and in promoting quantum-safe standards and

practices. The Fund should encourage member countries to collaborate closely in developing quantum-safe encryption standards to ensure interoperability and adopt encryption migration plans for their financial sectors. Today’s quantum computers are very sensitive. Any environmental disturbance, such as heat, light, or vibration, pulls qubits out of their quantum state and turns them into regular bits. This produces computation errors. Still, machines that compute with fewer errors and are capable of cracking codes are not far off. Financial institutions should recognize the risks and secure their systems before it is too late. After all, history is full of cautionary tales of supposedly unbreakable codes being cracked by new technology. JOSÉ DEODORO is the data collection platform owner and MAJID MALAIKA a lead digital transformation and cybersecurity risk expert in the IMF’s Information Technology Department. MICHAEL GORBANYOV is a senior economist in the IMF’s Strategy, Policy, and Review Department and TAHSIN SAADI SEDIK a deputy division chief in the IMF’s Asia and Pacific Department. This article is based on IMF Working Paper 21/71, “Quantum Computing and the Financial System: Spooky Action at a Distance?” Financial institutions must take immediate steps to prepare for a cryptographic transition. December 2021 | FINANCE & DEVELOPMENT 67 BOOK REVIEWS Managing Upheavals MASAAKI SHIRAKAWA’S four decades at the Bank of Japan (BOJ), from 1972 to 2013, were shaped by varied, and often tough, economic circumstances. The post-war economic miracle faded, a bubble economy inflated and burst, and lost decades ensued. There were challenges from abroad, including the global financial crisis and the economic rise of China—in 2000, China’s economy was one-quarter the size of Japan’s, but by 2015 it was twice as big. These developments, and others examined by former BOJ Governor Shirakawa, made for tumultuous times. Monetary policy has been constrained by limits on policy rates for a quarter century. The shadow of zero rates was already apparent by 1995. But since 1999, monetary policymaking in Japan has been dominated by the zero lower bound, forcing the BOJ to explore unconventional monetary policy instruments and expand its balance sheet. Japan provided an early guide for such policy initiatives later followed by many other advanced economy central banks. Shirakawa provides an insider’s account of central bank policies and candidly recounts interactions within the government and Parliament. Two of the lengthiest chapters reflect the anxieties of a central bank governor operating in a highly political environment. A section titled “My last month in office” comes at the end of a chapter on the long and difficult process that led to a joint statement by the government and the BOJ. But one of the most powerful pearls of political insight in the book is hidden at the end of a chapter on demographics. There, the author acknowledges that the young Shirakawa overlooked the political and social relevance of demographics. The older Shirakawa realizes that, as the electorate ages, a gray hair democracy has emerged, making reform more difficult. My favorite chapter is “What Should We Expect of the Central Bank?” Here Shirakawa examines the theory and practice of central banking, going beyond monetary policy. It argues that the first goal of the central bank is financial stability, even before price stability. This challenges the conventional view that price stability should be the primary goal of monetary policy. The book is full of insightful information in short, self-contained chapters. If you are interested in learning about central banking in a country with a declining population, low growth, and low interest rates, then Tumultuous Times is indispensable reading. Milton Friedman once wrote: “Monetary theory is like a Japanese garden. It has esthetic unity born of variety; an apparent simplicity that conceals a sophisticated reality; a surface view that dissolves in ever deeper perspectives.” The same can be said of Shirakawa’s thoughtful, multifaceted book. VITOR GASPAR, director, IMF Fiscal Affairs Department Masaaki Shirakawa Tumultuous Times: Central Banking in an Era of Crisis Yale University Press, New Haven, CT, 2021, 536 pp.,

$40.00 The older Shirakawa realizes that, as the electorate ages, a gray hair democracy has emerged, making reform more difficult. 68 FINANCE & DEVELOPMENT | December 2021 BOOK REVIEWS A Glorious Future for Money? AMONG ALL the technological change in today's digital economy, disruption is also occurring in one of the most fundamental technologies of our societies: money itself. In his new book, The Future of Money: How the Digital Revolution Is Transforming Currencies and Finance, Eswar Prasad puts this disruption into broader context. He argues that for all the digital innovation in finance in the past decades, we are standing on the precipice of what may be an even more dramatic change, with broad social, economic, and political implications. He shows convincingly that amid fintech, cryptocurrencies, and stablecoins—and the potential demise of cash—one of the most far-reaching innovations would be central bank digital currencies (CBDCs), a new form of central bank money. The book gives an impressive overview of the many changes digital technologies have already wrought. From the dramatic growth of mobile money in East Africa and China to the emergence of peer-to-peer lending and microinsurance, fintech has already shaken up finance and included hundreds of millions of new users in the financial system—particularly in emerging market and developing economies. He describes Bitcoin, Ethereum, and the distributed ledger technologies underlying them—but also the disappointment around their actual use in payments to date. CBDCs, Prasad argues, are an even bigger breakthrough. They could serve as a backstop to privately managed payment systems, further enhance financial inclusion, improve monetary policy transmission, and even fight corruption. But he is equally cognizant of the risks around the bypassing of banks, loss of privacy, and Orwellian oversight of citizens by authorities—risks that can be mitigated through proper design and legislative oversight. The book gives a sweeping overview of developments in payments, from the specifics of Ant Group's business to the e-krona project and Venezuela's Petro. It is interspersed with great anecdotes, like ABBA singer Björn Ulvaeus's battle against cash in Sweden (and the crime he says it fuels), to the acerbic dismissal of regulatory sandboxes (controlled testing environments for innovative services) by former New York Department of Financial Services Superintendent Maria Vullo. ("Toddlers play in sandboxes. Adults play by the rules.") As we would expect from an international macroeconomist like Prasad, there is also plenty of discussion on the implications of fintech and CBDCs for cross-border payments and the role of the US dollar as a reserve currency. The Future of Money is an engaging read, and a contribution to a genre. It fits nicely into a class with Felix Martin's highly entertaining Money: The Unauthorized Biography and Lana Swartz's illuminating New Money. Like them, it recognizes that the design of money is not just a technical matter, but a deeply important societal issue that affects us all. And Prasad stresses that as central banks run the gauntlet of policy choices around tomorrow's money, both issuance and non-issuance of CBDCs are conscious policy actions. To make the right choices, a broad dialogue with a well-informed public is key. JON FROST, senior economist, Innovation and the Digital Economy, Bank for International Settlements The views expressed here are those of the author and not necessarily those of the Bank for International Settlements. Eswar S. Prasad The Future of Money: How the Digital Revolution Is Transforming Currencies and Finance Belknap Press, Cambridge, MA, 2021, 496 pp., $35.00 December 2021 | FINANCE & DEVELOPMENT 69 BOOK REVIEWS Better Borrowing MANY AFRICAN COUNTRIES need to lift investment and living standards but have low domestic revenue and high public debt. The pandemic has exacerbated this challenge, with a further increase in debt-to-GDP ratios that poses both near-term issues and the question of how Africa should best use debt to achieve its long-term potential. Economist Gregory Smith's new book outlines an approach he calls "borrowing with purpose" that involves linking public borrowing with clear development strategies, better coordination among official creditors, more

responsible and “virtuous” actions by private creditors, and flexibility by the “umpires and architects” of the international system. Smith provides a wealth of information on Africa’s public debt landscape, problems associated with high debt, and proposals for avoiding—or resolving— debt crises and gaining the most from debt while minimizing risks. “Country stories” in each chapter discuss the situations of particular African countries. Africa’s debt has risen since 2010 after significant reductions through the Heavily Indebted Poor Country and the Multilateral Debt Relief initiatives as well as workouts with official and private creditors. This recent debt is less concessional and more commercial than before and involves diverse lenders, including China, Africa’s regional institutions, and others. In addition to raising commercial bank loans, countries increasingly are able to access global financial markets and issue Eurobonds, which help finance their budgets in the face of declining foreign aid and provide a signal for attracting other capital flows, but also carry new risks. Smith devotes a chapter to China’s lending to Africa, shedding light on the scale, terms, nature, purposes, and risks of this lending and discusses China’s debt relief to African countries over the decades. The international community’s debt relief to Africa during the debt crises of the 1980s and 1990s was insufficient, Smith argues, partly because of gaps in understanding how much debt is too much. He criticizes the adjustment programs supported by multilateral institutions during this period but does not develop the idea fully. Looking ahead, the main message is to aim for an “evolution, not a revolution” of the international system for debt workouts, as the G20 Common Framework and other efforts try to do. Borrowers, creditors, savers, and the umpires and architects of the international system should take action toward “better borrowing,” which would help countries’ development while minimizing crisis risks. Smith says to borrow prudently, use debt for productive investment, conduct active debt management, increase debt transparency, deepen domestic markets, and provide more flexible external financing—recommendations that will resonate with readers, who might also have appreciated insights on how to achieve them. The book’s commonsense approach and engaging style draw in the reader who, nonetheless, might benefit from operational definitions of such terms as “calmer” capital, “smarter” investment, and policies that are “fine.” Some IMF readers may flinch at the use of “bailouts” to refer to Fund programs. But these are details. Overall, the book is a valuable addition to the literature and well worth reading for those interested in African debt issues. VIVEK ARORA, deputy director, IMF African Department Gregory Smith Where Credit Is Due: How Africa’s Debt Can Be a Benefit, Not a Burden Hurst Publishers, London, UK, 2021, 240 pp., $34.95 The main message is to aim for an evolution, not a revolution, of the international system for debt workouts.

THE ECONOMICS OF HEALTH CARE

page 1 Welcome to the Office of Health Economics’ interactive e-source ‘The Economics of Health Care’. It is aimed at post-16 students of economic courses, although it contains much that should also be of interest to anyone wishing to understand the basic principles of health care economics. This e-source represents the third edition of ‘The Economics of Health Care’. The second edition, launched in 1999, has been fully updated and extended. This e-source is split into five units, which are shown on the left. In these units, we will show how

economists have approached the problem of health care. This involves introducing and explaining the economic theory which underpins health economists' analysis. Much of this theory will look familiar to economics students - scarcity, supply & demand and market failure. But this is not just classroom theory - this is theory applied to actual problems leading to concrete policies. This e-source should bring this textbook theory to life and it will give you a much deeper understanding of the kind of problems and challenges that the modern health service faces. There is also an appendix with six sets of data which are relevant to this e-source and will interest students and teachers. Foreword The future of health care and the state of the National Health Service are daily news items. Discussion of health care arouses great passion - who gets health care and how much they get is both a moral and practical challenge to a civilised society and of personal interest to us all. We don't want to get ill and we want to be properly treated if we do. Economics as a discipline can provide great insight into these issues. The fundamental problem of scarcity requires choices. Even if our preference is to spend more on health care, there are limits as to how much of our national income we can spend on its provision. However much we do decide to spend, we want to spend it efficiently so that we get more health care for a given commitment of resources. The Economics of Health Care This e-source was written by Martin Green of Watford Grammar School and prepared by ISE Ltd for the Office of Health Economics (OHE). Please contact ISE Ltd or OHE with any comments about the e-source or its contents respectively: Office of Health Economics, 12 Whitehall, London SW1A 2DY e-mail: ohe@oheschools.org Industry Supports Education 15 High Street Wilburton, Nr Ely, Cambs. CB6 3RB e-mail: ise@oheschools.org Health care is something which touches all of our lives. Everybody visits the doctor and dentist and many of us have been treated in hospital. The future of the National Health Service (NHS) consistently surfaces as one of the most important issues which people believe is facing Britain today. Yet health care seems to be in almost permanent crisis – there are shortages of hospital beds and patients are left to lie in corridors while politicians argue endlessly over whether more or less is being spent on the NHS. Why is it that health care is such a controversial area? Why is there never enough money to give us the level of health care we want? To answer these questions we need to introduce and apply a range of economic concepts. Each of the sections listed on the left develops part of the answer. 1. The problems of health care page 3 i. Approaching the problems ii. Scarcity - health care dimension iii. Scarcity - a theoretical approach iv. Trade-offs v. Using the theory vi. Case study - Child B vii. Approaches to rationing viii. Questions and activities How can we resolve the kind of dilemmas expressed in these headlines? Asking people what they think This is the approach Ann Bowling of the King's Fund took. She set out to discover what 'ordinary people' thought should be the health service priorities by conducting a detailed survey of the residents of a part of London. Below are some responses taken from the survey. * "I think life saving treatments for children are most important. We've had our time now" * "If a child is really unable to survive it really does seem a bit naive to plough a lot of money into it" * "If people don't lead healthy lives why should the health authority waste money on making them aware" * "The most important thing is to cure people who have life threatening illness and then help people to lead a good life" * "Instead of curing it prevent it. There's no guarantee that you can cure someone so it is better to prevent illness" * "Care of the dying is most important - why should people suffer?" Many economists would argue that the problem with these responses is that they mix up opinions and value judgements with facts. Economists believe that it is important to distinguish questions of fact from value judgements and opinions. Fact or opinion? A statement such as "Specialist in heart-lung transplants resigns from

the NHS in protest at lack of funding" is a positive statement: it can be shown to be true or false and is not dependent upon the value system of the observer. In contrast, "Health care is a basic right and should be provided free" is a normative statement. It cannot be proved true or false: our view of it depends on our value system. One of the things which makes the debate over the provision of health care difficult to resolve is that positive and normative issues are very much intertwined. Sorting out fact from opinion is a first step but it does not explain why there are not enough beds in hospitals or why people might be refused treatment. To analyse this we need to explore the idea of scarcity. i. Approaching the problems page 4 © Angela Martin © Angela Martin Scarcity has two sides: the infinite nature of human wants and the finite or limited nature of resources available to produce goods and services. What does this mean when related to health care? We'll examine the wants first. The wants Why do people demand health care? The simple answer is that they want to be healthy. This desire to remain healthy has led to a continuous growth in the demand for health care. However, there are also a number of specific reasons why the demand for health care has expanded so dramatically in developed countries over the last 40 years: Changes in the age structure Increasing real incomes Improvements in medical technology Let's look at these in more detail. Changes in age structure Changes in the age structure of the population have increased the demand for health care. Countries like the UK have an ageing population. Elderly people require more health care than other age groups. For instance, in 1998/99, 39% of NHS hospital and community health services expenditure was used for treating people aged 65 and over, even though they are only 16% of the total population. Only 11% of the population were 65 or older when the NHS was founded in 1948. Increasing real incomes Increasing real incomes have led to an increase in people's expectations of health care. Many of us are now not prepared to put up with the pain, discomfort and lack of mobility associated with afflictions like severe osteoarthritis of the hip - we demand a hip replacement operation. In the USA, people suffering from mild osteoarthritis of the knee often have an operation rather than give up playing golf. Improvements in medical technology Improvements in medical technology have continuously increased the range of treatments possible. A good example of this is the way in which the development of kidney dialysis machines has largely prevented kidney failure from killing people. As well as ii. Scarcity - the health care dimension page 5 It is estimated that by 2031 the over 65s will be 23% of the UK population. If you visit your doctor (general practitioner, GP) you will go to the surgery (land and capital), have your appointment verified by the receptionist (labour), be examined by the doctor (enterprise and labour) who might use a stethoscope (capital) to listen to your chest before prescribing a course of antibiotics (land, labour, capital and enterprise) to treat your chest infection. 1948 1999 Number of elderly people in the UK in millions 5.3 9.3 (defined as aged 65 and over) As % of population 10.7 15.6 page 6 new and more effective medicines allowing us to treat conditions which were previously incurable, many new treatments now make chronic diseases like asthma manageable for patients, enabling them to have a good quality of life. The resources The other side of the scarcity equation relates to the finite nature of resources. The term 'resources' covers all inputs used to produce goods and services. Economists also refer to these as the factors of production. They are divided into four categories: 1. land - the physical resources of the planet including mineral deposits 2. labour - human resources in the sense of people as workers 3. capital - resources created by humans to aid production, such as tools, machinery and factories 4. enterprise - the human resource of organising the other three factors to produce goods and services. We can see all four factors at work in the production of health care It is fairly obvious that the available quantity of these factors is limited, therefore there is some maximum

quantity of health care that can be produced at any one time. We can explore this idea theoretically by using what economists call a Production Possibility Frontier (PPF). Scarcity has two sides: the infinite nature of human wants and the finite or limited nature of resources available to produce goods and services. We can explore this idea theoretically by using what economists call a Production Possibility Frontier (PPF). PPFs in health care Let us start by looking at the production of health care within a single hospital and in particular at the ability of a specific hospital unit to carry out surgical procedures such as heart bypass operations. Suppose the heart bypass unit has 10 surgeons working in it, and assume that the only factor which affects the quantity of operations provided is the number of surgeons assigned to them. If all the surgeons are assigned to heart bypass operations then the unit can carry out 50 heart operations per week. If, on the other hand, all the surgeons are assigned to other operations, then the unit can carry out 50 of these other operations per week. Figure 1 shows the production possibility frontier for this unit. The graph charts all the possible maximum combinations of operations that the unit can achieve given the quantity and productivity of resources available. The shape of the graph What determines the shape of the graph? Look at the graph on the left (Figure 1). It is a straight line, with a gradient of -1. This reflects the fact that if we transfer one surgeon to heart bypass from other operations, we get five more heart bypasses but we lose five of the other operations, i.e. the trade-off between the two possibilities is one to one. This is what is called the marginal rate of transformation, MRT. In fact it is highly unlikely that the marginal rate of transformation would be constant. The surgeons carrying out heart bypass operations would be working with a fixed quantity of operating theatres, heart monitors, and other inputs. So the more surgeons carrying out bypass operations, the less equipment each one would have. Therefore, the output per surgeon would fall. So, the number of additional bypass operations carried out by an extra surgeon is different depending on how many surgeons are already doing bypasses. If there are already a lot of surgeons doing bypass operations, the extra one creates only a small iii. Scarcity - a theoretical approach page 7 0 10 20 30 40 50 0 10 20 30 40 50 Heart operations Other operations Figure 1 Heart bypass surgery is about to start. page 8 increase in the number of bypass operations. This bends the line downwards, making it concave. This increase is smaller than if there were only a few surgeons already doing bypass operations. This phenomenon is called the Law of Diminishing Returns and makes the PPF concave to the origin (like Figure 2). Efficiency Now look at point A in Figure 2. It corresponds to 14 bypass operations combined with 10 other operations. This lies within the PPF in this case (the curve passing through points B and C). Clearly this is a possible combination in the sense that the hospital has enough resources to achieve it, but is it an efficient combination?

3 What do we mean by efficient? The definition of efficiency used by economists is named after the Italian economist, Vilfredo Pareto, who formulated it. He said that an allocation of resources is efficient if it is impossible to change that allocation to make one person better off without making someone else worse off. Look at combination A again. Obviously it would be possible to re-organise the hospital's resources to increase the number of other operations without having to reduce the number of heart operations. This is shown by point B on the diagram. Moving from combination A to combination B is clearly in society's interests: we are getting an extra four other operations, i.e. more medical care from our scarce resources. Opportunity cost In fact at point B we are getting a maximum combination possible, given the resources we have. It is a Pareto efficient allocation. If we choose to move from combination B to combination C, then although we are getting five more bypass operations this has been at the expense of nine other operations. Thus moving from combination B to C involves a cost, which economists call an opportunity cost. Formally, this is defined as the benefit given up by not choosing the next best alternative. In this case the opportunity

cost of moving from point B to C is nine other operations. All combinations which lie on a PPF are, by definition, pareto efficient. 0 5 10 15 20 0 5 10 15 50 Heart operations Other operations A B C + + + Figure 2 Getting more treatment There are only two ways that society can get more treatment: A. By improving the productivity of the factors of production, so that the same quantity of factors produces more treatments. For example, Figure 2 showed surgeons being able to produce either 20 heart bypass or 20 other operations. Increased productivity of surgeons carrying out heart bypasses results in the PPF pivoting outwards, e.g. to 28 heart bypasses or 20 other operations as in Figure 3a. B. By increasing the quantity of the factors of production. The initial position is again 20 heart bypass or 20 other operations. When more surgeons are allocated to all operations then the PPF shifts outwards, e.g. to 24 heart bypass or 24 other operations as in Figure 3b. The cost of more treatment The PPFs we have been using relate to choices between different types of health care. But we can equally use PPF analysis to illustrate the trade-off between health care and all other goods. Such a PPF is shown in Figure 4. It is unlikely that society would choose either point A or B, but they and all points between are feasible. The question is how does society decide between them. page 9 0 25 5 10 20 30 0 5 10 15 20 25 15 Other operations Heart surgeons become more productive 0 25 5 10 20 30 0 5 10 15 20 25 15 Other operations More surgeons for all operations 0 50 10 20 40 60 0 20 10 30 40 50 60 All other goods 30 Health care A - B all healthcare and no education, police etc. Figure 3a Figure 3b Figure 4 Allocation of health care Given scarcity, what we need is an allocation or decision making system to determine how much of which kinds of health care is provided. There are three possibilities: the free market; the command system; and the mixed system. The free market would allocate health care resources according to consumers' purchasing behaviour, while the command model would use planning to allocate health care according to some predetermined criterion such as 'need.' The mixed system would combine parts of the free market with elements of the command model. Efficiency How can society decide which of these systems is most suitable in any given case? There are two criteria that economists use to assess the performance of an allocation system. The first is efficiency: does the system produce an allocation which is Pareto efficient (and thus on the economy's PPF). If the allocation is efficient then the economy is producing exactly the quantity and type of health care that society wants (allocative efficiency) and it is producing that health care for the lowest possible cost (productive efficiency). Equity The second criterion is equity: does the system produce an allocation which meets society's requirement for justice? Clearly, this is a normative issue: the decision made depends upon people's values. However, it is a very important consideration for many people when they consider the allocation of health care. It is possible to argue, for instance, that notions of social justice were the single most important influence on the setting up of the National Health Service in the UK. Equity is a difficult concept to analyse but it helps if we differentiate between horizontal and vertical equity. Horizontal equity is concerned with the equal treatment of equal need. This means that to be horizontally equitable, the health care allocation system must treat two individuals with the same complaint in an identical way. Vertical equity, on the other hand, is concerned with the extent to which individuals who are unequal should be treated differently. In health care it can be reflected by the aim of unequal treatment for unequal need, i.e. more treatment for those with serious conditions than for those with trivial complaints, or by basing the financing of health care on ability to pay, e.g. via progressive income tax. iv. Trade-offs page 10 What has the economic analysis in the previous pages added to our understanding of health care problems? Take the newspaper report on the left. What can we say about this? Firstly, the statement is positive and so capable of being analysed objectively. Secondly, the conflict has been partly brought about

by the effects of developing medical technology - without the development of the scanner we would not have had the conflict. Lastly, PPF analysis makes it clear that this situation reflects one of two possibilities. Either the hospital is operating on its frontier, or it is operating at some point inside its frontier. In the first case, either we have to find some way of deciding between the two efficient allocations (scanner versus children’s unit) or we have to devote more resources to medical care in this hospital (shift the PPF outwards). In the second case, since the initial allocation was inefficient, there may be no need to choose between the two possibilities. If we just remove the inefficiencies we may then have enough resources to have both the scanner and the children’s unit. Debate on the NHS This may seem rather simplistic but it does relate directly to the debate about changes in the NHS. The government has tended to argue that existing allocations have been inefficient, so that it is possible to get more from existing resources. Critics of their policy have argued on the other hand that the problem is a lack of resources. v. Using the theory page 11 A unique hospital unit for children with severe learning disabilities and extreme behaviour problems faces closure so that much of its £350,000 annual budget can be diverted to run a scanner in another department. Article from The Guardian 8/1/92. Is this the result of not enough resources or does it just reflect the transfer of resources to a more efficient use? page 12 Health care rationing hit the headlines in March 1995 with the case of Child B. Some of the newspaper headlines are shown on the left. The case Child B, or Jaymee Bowen as she was later revealed to be, was suffering from leukaemia. She developed acute lymphoblastic leukaemia when she was five and received a bone marrow transplant. She appeared to recover but in January 1995, when she was 10 she was diagnosed as suffering from acute myeloid leukaemia. NHS consultants at both Addenbrookes and the Royal Marsden hospitals said that she had only about eight weeks to live and that the only possible treatment, intensive chemotherapy and a second bone marrow transplant, was very unlikely to succeed, unpleasant and not in her best interests. Her father refused to accept this and sought opinions from other doctors in Britain and the United States. He found a consultant in London who was prepared to treat his daughter in the private sector, but Cambridge and Huntingdon Health Authority refused to grant the £75,000 needed for the treatment. Jaymee Bowen’s father challenged this refusal in the High Court. The Court ruled that health authority should reconsider its decision but this was immediately overturned on appeal. The case attracted much publicity and an anonymous private benefactor paid for the treatment Jaymee’s father wanted her to have. Intensive chemotherapy met with only limited success and so the consultant decided to treat Jaymee Bowen with an experimental treatment, donor lymphocyte infusion. Jaymee went into remission and survived longer than the experts had expected.
3 However, in May 1996 she died. Newspaper response This case demonstrated how difficult it can be to make rational, reasoned choices - particularly when the media become involved. There was an enormous amount of media attention - with 149 articles being published over the six day period of the case. Many articles suggested that NHS funds were wasted on less worthy uses - funds which could have been used to treat Jaymee Bowen. Examples of less worthy uses of NHS funds cited by the papers included administration, managers’ cars, abortions, cosmetic surgery, sex change operations and health education ‘propaganda’. vi. Case study - Child B page 13 For a number of papers the case provided evidence of rationing ‘creeping into the NHS’. For instance “The case has brought into sharp and public focus the simple, central truth of modern stateprovided medicine. The National Health Service cannot possibly afford what is now medically possible” The Independent 11.3.1995 and “These latest examples raise fears that rationing of life saving resources is not just creeping into the NHS but is already entrenched” The Daily Telegraph 11.3.1995. Analysis Entwistle, Watt, Bradbury and Pehl, reviewing this media coverage, are concerned by “their

selective presentations". They conclude "Decisions about the treatment of seriously ill children and the rationing of health care are both complex and emotive....Publicity brought the case and some of the issues it raised into the open, but it did not necessarily leave people well informed. In particular, the question of whether the treatment was in the child's best interest was relatively neglected. Child B became "the girl refused treatment on the NHS" ...The current climate...means that even cases that are primarily about clinical effectiveness and a patient's best interests come to be seen as examples of rationing." Conclusion This case raises many questions, some of which have been touched on in this unit. However, you also should look at Unit 2 for a free market perspective and Unit 3 for some thoughts on whether individuals can decide what is in their own best interest. The Child B case was seen by many as an example of health care rationing. How could such rationing be organised? Look at 'Approaches to rationing' on the next page for some thoughts on this. It has been increasingly accepted at both local and national level in the UK that rationing is inevitable in the NHS. This has led to initiatives to explore the best way of making such decisions. One approach has been to use surveys of randomly sampled adults. One such survey carried out in Great Britain in 1995/6 generated a 75% response rate and most of the people surveyed thought that surveys like this should be used in the planning of health services. The list below shows how this sample thought health care services should be prioritised. Priority rating of health services 1. Treatments for children with life-threatening illnesses 2. Special care and pain relief for people who are dying 3. Preventive screening services and immunisations 4. Surgery such as hip replacements to help people carry out everyday tasks 5. District nursing and community services/care at home 6. Psychiatric services for people with mental illnesses 7. High technology surgery, organ transplants and procedures which treat life threatening conditions 8. Health promotion / education services to help people lead healthy lives 9. Intensive care for premature babies who weigh less than 680g with only a slight chance of survival 10. Long stay hospital care for elderly people 11. Treatment for infertility 12. Treatment for people aged 75 and over with life threatening illness Citizens' juries The case of Jaymee Bowen (Child B) outlined in the previous section, made the issue of health care rationing in the UK headline news. Cambridge and Huntingdon Health Authority responded to this 'trial by tabloid' by setting up a citizens' jury to help decide health care prioritisation. Sixteen 'jurors' sat for four days hearing advice from expert witnesses. They were asked to consider how priorities for health care should be set, according to what criteria and to what extent the public should be involved. Most thought that there should be an element of public involvement in developing rationing guidelines, but only alongside other interests. Nobody voted for the involvement of politicians in a national council for priority setting. One option is to 'let the market decide'. This is explored in Unit 2 'The free market approach to health care'. vii. Approaches to rationing page 14 Questions 1. Look at the following statements and see if you can decide whether they are positive or normative: A. Junior doctors ought not to work up to 80 hours a week B. The long hours junior doctors work do not interfere with their ability to provide effective medical treatment C. The waiting times for routine surgery are shorter for private patients than for NHS patients D. NHS doctors should not be allowed to treat patients privately E. A hip replacement is not a life-saving operation F. Hip replacements should not be provided by the NHS. 2. Why do you think that economists believe that it is important to distinguish between positive and normative statements? Do you think it is possible to ever be completely positive? Activities A1. Set up a survey to try to discover which health care priorities people in your school or college think are most important. You could do this by interviewing a sample of students or you could construct a questionnaire. A2. Research how demand for health care has

changed in your area. Your local library should have information about the health care services available. Try to answer the following questions. Has the number of old people changed significantly in the last 10 years? What about new treatments - does your doctor offer stress counselling for instance? Has your local hospital introduced new equipment such as body scanners? viii. Questions and activities page 15 page 16 Questions 3. a) The graph in Figure 5 on the left shows a PPF. Identify the following combinations: A. 60 bypass and 19 other operations; B. 15 bypass and 54 other operations; C. 40 bypass and 40 other operations; D. 40 bypass and 58 other operations. b) Which of these are feasible and which are efficient? 4. Why is it unlikely that society will choose either combination E or F in Figure 5? Activity A3. Many hospitals have been reduced in size or closed down. Research why this happened. Try to relate it to changes in the trade-off between hospitals and other forms of health care. Questions 5. Which do you think is more important - that we treat all patients with kidney failure in the same way or that we make sure that we devote more health care resources to kidney failure than to plastic surgery? Justify your answer. 6. Do you think that the rich should contribute more to the financing of health care than the poor? Justify your answer. Type in your answers, then click here to compare your answer with our guide answer. 0 10 20 30 50 6 0 40 0 10 20 30 40 80 60 70 50 Heart operations Other operations A B C D E F Figure 5 page 17 One way in which the problem of scarcity can be overcome is to let people buy the health care they want. This is what happens with most cosmetic surgery. “A man can have a facelift, a nose correction and his eyes tightened up. His whole face can be rebuilt for a third of the cost of the front end of an expensive car respray” - The Guardian 7.6.91 2. The free market approach All these treatments and more are available if you want to buy them and have the money to pay for them. This kind of health care is sold just like any consumer good. People buy the treatment because they gain satisfaction from it, in just the same way that they would gain satisfaction from a car or a new dress. As consultant plastic surgeon David Sharpe puts it “There’s nothing wrong with having plastic surgery, even if you don’t need it. It’s like buying a Porsche. You don’t need one. It just makes you feel better”. The market for cosmetic surgery shows that it is possible to buy and sell health care. To understand how such a market might work as a resource allocation system, we need to look at the different elements involved in any market. Look at ‘What is a market’ to see what these elements are. Even if a market can work for cosmetic surgery what about the rest of health care? Look at ‘Health care - case for a free market’ for some views on this. i. What is a market? ii. Health care - case for a free market iii. Questions and activity a. Demand - analysing the buyers b. Supply - analysing the sellers c. The market d. How a market allocates resources e. Case study - cosmetic surgery g. Markets as dynamic systems Case study - health care in the
3 US f. Elasticity Overview For many people the word market conjures up a picture of a town square with lots of small stall holders selling everything from fruit and vegetables to meat and fish. For economists, the term has a much wider meaning. It is used to describe any process of exchange between buyers and sellers. Formally, a market can be defined as any set of arrangements which allows buyers and sellers to communicate and thus arrange exchange of goods, services or resources. A free market is where such exchange occurs without interference from the government. Information is a vital ingredient for any market. Both buyers and sellers need to have access to sufficient information to allow them to make rational decisions. Who are the buyers and sellers? So a market for health care must involve two groups: the buyers and the sellers, who interact to trade health care. Who would the buyers and sellers be in such a market? We all want good health and so most of us would be prepared, if necessary, to purchase medical treatment to cure an illness. This suggests that everybody is potentially a buyer (or consumer) of health care. More precisely, at any moment, a buyer would be anybody who was ill or who wanted preventative medical treatment

such as a vaccination or who wanted guidance about their health. The sellers would be those people who could provide medical and health care services, such as doctors, nurses, physiotherapists, dentists and high street chemists. In the UK osteopathy provides an example of a health care market which corresponds quite closely to the textbook model of a market. Osteopaths manipulate and massage bones, muscles and ligaments which have been twisted or strained in some way. Increasingly, they specialise in dealing with the kind of sprains and strains that people get from sporting activities. Until 1993, anybody could set up as an osteopath and advertise their services. Osteopaths operated outside the NHS selling their services directly to consumers. Osteopaths either worked individually or in small practices and they all sold a very similar service. In the next three sections we use the example of osteopathy to look at demand then supply and then put the buyers and sellers together to look at the market for osteopathy. i. What is a market? page 18 page 19 What will influence how much osteopathy people are prepared to buy at any particular time? Substitution and income effects Perhaps the most important factor will be the price of the treatment. The more expensive it is to buy osteopathy, all other factors remaining constant, the less we will buy. Why? When osteopathy becomes more expensive two things happen: 1. relative prices change; and 2. our real income changes. When we react to the price rise, we are taking both of these changes into account. The change in relative price means that osteopathy is now more expensive compared to other goods and services. How do we respond to this? Economists assume that people are satisfaction maximisers. This means that we all try to gain as much satisfaction as possible from our consumption of goods and services. So we react to the fact that osteopathy is now relatively more expensive by choosing to buy less of it and more of something else instead (substitution effect). The increase in the price of osteopathy has also reduced our real income - we can now buy less than before with our money income. The way which we react to this change in real income depends on the kind of good or service. Osteopathy, like most goods, is a normal good - an increase in income leads to an increase in demand and vice versa. So a fall in real income will further reduce the amount of treatment bought (income effect). The demand curve This predictable relationship between price and quantity demanded allows us to define demand formally as the quantity of a good or service that buyers are willing and able to buy at every conceivable price. The demand curve (see Figure 6a on the left) shows this relationship graphically. DD shows the quantity of osteopathy treatments that consumers are prepared to buy at every conceivable price. A change in price leads to a movement along the demand curve.When the price is P consumers will buy Q. If the price falls to P' then the quantity demanded will rise to Q'. A change in price has led to a movement along the demand curve. Osteopaths manipulate and massage bones, muscles and ligaments that have been twisted or strained. a. Demand - analysing the buyers’ behaviour Quantity Price Fall in price Increased demand D D Q Q1 P1 P Figure 6a page 20 What else will influence how much osteopathy we buy? The answer is our income, our preferences and the prices of other goods. Osteopathy is a normal good so if our income rises we will buy more treatment at each price, and if it falls we will buy less. If our preferences change, we will buy more or less osteopathy at each price. If we decide we are keen on osteopathy, then we will buy more of it. If we go off the idea of osteopathy, then the amount we buy will drop. Our demand for osteopathy will also be affected by the prices of related services. An obvious example is the price of physiotherapy, which is an alternative (or substitute) treatment for many of the conditions treated by osteopaths. If the price of physiotherapy falls then some people are likely to switch from osteopathy to physiotherapy, so the demand for osteopathy would fall. Our demand for goods and services is also affected by changes in prices of complementary goods. These are goods and services which tend to be bought together. For instance, if the

price of eye tests rose significantly, then many people would not bother to get their eyes checked regularly. This would lead to a fall in the demand for spectacles. Whenever income, preferences or the price of a related good or service changes, the demand curve shifts. You can try out the effects of changes in the graph on the left. Figure 6b Demand curves shifts inwards from DD to D1 D1 as a result of: a fall in income a fall in preferences a fall in price of substitute a rise in price of complement Figure 6c Demand curve shifts outwards from DD to D1 D1 as a result of: a rise in income an increase in preferences a rise in price of substitute a fall in price of complement Quantity Price D D D1 D1 Quantity Price D D D1 D1 page 21 The sellers in this market are the osteopaths we described earlier. We assume that these osteopaths want to maximise their profits. What are profits and how can they be maximised? Osteopaths earn money (revenue) by selling their services e.g. by massaging away muscular strains. Out of this revenue they need to pay for the factors they use to produce the treatment (costs) e.g. pay their receptionist, pay the rent or pay for a new ultrasound machine. Profit is the excess of revenue over costs. Maximising profits Seeking to maximise profits leads each osteopath to want to sell more care at higher prices. There is a reliable and predictable positive relationship between price and quantity supplied. Formally, supply is defined as the quantity of a good or service that a population of sellers is willing and able to sell at every conceivable price. This positive relationship is shown graphically by the supply curve on the left - SS. If the price changes there is a movement along the supply curve (see Figure 7). At price P the osteopath population is prepared to sell Q treatments. When the price rises to P' the osteopath population is prepared to sell Q' treatments - this might be because more people become osteopaths when it becomes a more lucrative job. Change in costs If the level of factor costs changes then the supply curve will shift. For example nurses’ wages could go up or the rent could fall. Let’s look at the effects of these. In Figure 8a, SS is the initial supply curve for treatments. Imagine that nurses’ wages rise, pushing up osteopaths’ costs. The osteopaths react by being prepared to supply fewer treatments at each price (this may be because there are fewer osteopaths). At a price such as P' osteopaths are now only prepared to sell Q" treatments rather than Q'. The supply curve shifts inwards to S'S'. Now imagine that rents fall. The profit of osteopaths will increase for each treatment. The osteopath population will react by being prepared to supply more treatments at each price. See Figure 8b. At the price P' osteopaths are now prepared to sell Q"' treatments rather than Q'. The supply curve shifts outwards. b. Supply - analysing the sellers’ behaviour Quantity Price P1 P Q Q1 S S At a higher price osteopaths are willing to sell more treatments Quantity Price P1 Q11 Q1 S S S1 S1 Quantity Price P1 Q1 Q111 S11 S11 S S Figure 8a. SS is the initial supply curve for treatments. Now nurses’ wages rise, pushing up osteopaths’ costs.
3 Osteopaths react by being prepared to supply fewer treatments at each price. The supply curve shifts inwards to S' S' . At a price such as P' osteopaths are now only prepared to sell Q'' treatments rather than Q'. Figure 8b. SS is the initial supply curve for treatments. Now rents fall and osteopaths react by being prepared to supply more treatments at each price. The supply curve shifts outwards to S'' S''. At a price such as P' osteopaths are now prepared to sell Q''' treatments rather than Q'. Figure 7. The supply curve for osteopathy treatments. We can now put the demand and supply curves together. This will give us a picture of the market for osteopathy. This is shown by Figure 9a. Notice that there is only one price at which the quantity of treatments people want to buy is the same as the quantity the osteopaths want to sell. This is called the equilibrium price Pe. The corresponding quantity is the equilibrium quantity - Qe. The equilibrium is a state of rest where there is no pressure for change. At any other price either buyers or sellers are dissatisfied and act to change the quantity demanded or supplied. Excess demand If there is excess demand, consumers bid up the price. In Figure 9b, at price P' consumers demand Q'. The price is low so a lot of people are

willing and able to buy treatments. However, the low price means that there aren't enough osteopaths prepared to provide this amount of treatment. They are only prepared to provide Q". The excess demand (Q' – Q") causes the consumers to bid the price up to the equilibrium price Pe. Excess supply In Figure 9c at P" the price is too high. Consumers only demand Q"' treatments. However,the osteopaths want to sell more treatment: Q"". So there is an excess of supply (Q"" – Q"'). This will lead to osteopaths having to cut their prices (to encourage more consumers to buy treatment). As sellers, they will have to reduce their prices until they reach the equilibrium price Pe. So the free interaction of buyers and sellers in the market automatically leads to a single price at which the quantity traded 'clears' the market, i.e. the quantity supplied equals the quantity demanded. c. The market page 22 Quantity Price Pe Qe D D S S Quantity Price Pe P1 Q11 Qe Q1 D D S S Quantity Price Pe P11 Q111 Qe Q1111 D D S S Figure 9a Figure 9b Figure 9c We have shown how supply and demand combine to give a single stable price and output - the equilibrium. But what happens when something comes along and upsets this equilibrium? Economists call anything which moves a market out of equilibrium a shock. Shocks could come from shifts in demand caused by such things as changes in income or from shifts in supply caused by such things as a change in costs. In each case the shock upsets the market equilibrium. How will the market respond? How the market responds to a shock Let's analyse the reaction by looking at a demand shock caused by a rise in people's incomes. How will the osteopathy market react? The graph on the left, Figure 10, shows the initial supply and demand curves - SS and DD. The initial market equilibrium is at a price P' and quantity Q'. Now imagine that there is an increase in people's income. The demand curve will shift outwards to D'D' because people are willing to buy more osteopathy treatments at the same price (osteopathy is a normal good). This shift in demand throws the market out of equilibrium. Now people want to buy Q"' treatments at price P' but the osteopaths are still only prepared to sell Q' at that price. The result is excess demand and unsatisfied buyers who react by 'bidding up' the price. The rise in price simultaneously reduces the demand and increases the supply until the market regains equilibrium at a new price and quantity. The rise in people's incomes has led to a new equilibrium at a higher price P" and a higher quantity Q" than before. This process will occur whenever there is shock leading to either a shift in demand or supply. The market will move out of equilibrium with either excess demand or excess supply appearing. The price will then adjust until equilibrium is regained. The 'invisible hand' We have just demonstrated that our free market will automatically produce an equilibrium price and quantity. It is this which makes it a very powerful allocation system. (See page 10 in Unit 1). This is what Adam Smith (the founding father of economics) referred to as the "invisible hand". d. How a market allocates resources page 23 Quantity Price P1 P11 Q1 Q11 Q111 D1 D D D1 S S Figure 10 page 24 Who decides how much osteopathy is to be produced? The answer in a free market is consumers. They go out and buy osteopathy treatments and the price they are prepared to pay sends signals to the osteopaths. The osteopaths respond by producing either more or less treatment. The market not only allocates resources automatically, it does so efficiently. Providing certain conditions are met, the free market will achieve a Pareto efficient allocation. (See page 8 in Unit 1). From price mechanism to a Pareto efficient allocation For the consumer, the price they are willing to pay measures the benefit or utility that the consumers expect to receive from consuming the last unit. To be precise, the demand curve reflects the marginal utility (extra benefit) that consumers receive from consuming the last unit. Consumers only buy something if it is worth as much as or more than the other things that the same money could buy. So if the price of something is greater than the benefit they get from consuming it, they will not buy it. For the producer or seller, the price they

are willing to accept measures the cost of the resources involved in the production including the supplier’s own time and effort. Again to be precise, the supply curve reflects the seller’s marginal costs (the cost of producing an extra unit). Thus when a market is in equilibrium marginal benefit equals marginal cost equals price. The benefit received from the last unit consumed will exactly equal the resource cost of producing that unit. This fulfils the condition for allocative efficiency. Competing producers chasing maximum profits will always choose the least cost combination of factors to produce a given output. Consequently, the free market will also be productively efficient. How well does our theoretical model of a market explain what has been going on with cosmetic surgery? Look at this newspaper report on the growth of cosmetic dentistry. Putting your money where your mouth is Maggie Smith is a publisher in her late 40s who has just splashed out on a £1,400 “tooth lift”. “I saw the treatment as an investment. Compared with the cost of a couple of outfits, it’s not that expensive and it lasts much longer”. Smith purchased her cosmetic dentistry from Dentics on London’s Kings Road. Dentics opened its first “tooth boutique” four years ago and now has three London branches. Customers can walk into the shop-fronted surgeries without an appointment and browse through albums of photos showing wayward canines tamed into piano keyboards by bleaching, filing down, building with resins or covering with porcelain veneers. Each treatment costs around £200. Primary school teacher Elizabeth Eccose-Westley regarded the treatment as an affordable luxury. “I’m not rich and I’m not vain, but at 42 I started to feel I was getting long in the tooth. I spent £1,000 on porcelain veneers, instead of a summer holiday, and it’s really boosted my confidence. Give it another couple of years and people won’t think twice about it. Everybody will be having it done.” Emma Brooker Guardian 16.9.93 Clearly there is a demand for cosmetic dentistry - people are willing and able to pay for it. Both the women in the article viewed the cosmetic treatment as something which gave them ‘utility’, i.e. satisfaction, and they consciously compared the satisfaction gained with that from other purchases. The article also provides evidence that the market is growing. Why is this happening? e. Case study - cosmetic surgery page 25 More durable and lifelike dental porcelains and resins, developed recently, have given rise to specialists in cosmetic dentistry selling off-thepeg designer smiles. page 26

Economic analysis The initial supply and demand curves the system is in equilibrium.

The first change is that technology has reduced the costs of such treatment - shifting the supply curve outwards. Demand also seems to be growing; why is this? According to a recent national survey, one in four people dislikes their appearance suggesting that they would consider buying this kind of treatment if they could afford it. So consumers are likely to respond to the lower prices brought about by the shift in supply - a movement down the market demand curve. This sets up a new equilibrium at P'' and Q'' in Figure 11b. The next change is an increase in consumers’ real income leading to an outward shift in the demand curve from DD to D'D'. See Figure 11c. So there is a near equilibrium at P''' and Q'''. Suppliers have reacted to the growth of consumer demand in exactly the way our theory predicts. Dentics has expanded its operations by opening more shops and providing more treatments. Reduced costs and extra consumer demand have both led to the allocation of more resources to cosmetic dental treatment. So our model has performed fairly well. But we can develop it further by introducing the concept of elasticity. Quantity Price P1 Q1 D D S S Quantity Price P1 P11 Q1 Q11 D D S S S1 S1 Figure 11 a Figure 11 b Figure 11 c Quantity Price P1 P11 P111 Q1 Q11 Q111 D D1 D1 D S S S1 S1 Elasticity provides a way of measuring how sensitive demand or supply is to factors such as a change in price. Take the relationship between price and quantity demanded. We know that if price rises then people will buy less but we do not know how much less. Price elasticity of demand allows us to calculate this. Price elasticity of demand (PED) The formula

for price elasticity of demand (PED) is % change in quantity demanded % change in price of the good So if the price of osteopathy rose by 10% and the quantity bought fell by 5% then the PED would be –5%/+10% = –0.5. This tells us that demand for osteopathy is not particularly sensitive to changes in price. It is what economists call price inelastic. Take another example, if the price of eye tests fell by 20% and the quantity of eye tests bought rose by 30% then the value of PED would be +30%/–20% = –1.5. In this case the demand for eye tests is price elastic, i.e. sensitive to changes in price. Notice several things about PED. First, the value of PED is always negative reflecting the inverse relationship between price and quantity demanded. Second, PED is just a number, it is not expressed in terms of any particular units. How do we know whether demand is elastic or inelastic? The rule is: Demand is price inelastic whenever the % change in price leads to a smaller % change in quantity demanded. This gives PED values between 0 and –1. Demand is price elastic whenever the % change in price leads to a larger % change in quantity demanded. This gives PED values between –1 and –infinity. Price elasticity of demand allows us to predict what will happen to spending when price changes. Take the example of the increase in the price of osteopathy used above. As the price of osteopathy rises, people will buy fewer treatments but will they spend less? Suppose the price of a treatment rose from £20 an hour to £22 (a price increase of 10%). At £20 an hour, consumers were buying 1,000 treatments per week and spending £20,000. After the price rise they bought 950 a week (a fall of 5%) but their spending had risen to £20,900 (= 950 x £22). So the answer in this case is no. People spend more on osteopathy after the price f. Elasticity page 27 rise because the percentage increase in price is greater than the percentage fall in sales volume. So although osteopaths sell fewer treatments, the higher price of each treatment more than offsets the lost quantity of treatments sold. This gives us a general rule: If PED is inelastic, a rise in price will lead to people spending more while a fall in price will lead to people spending less. If PED is elastic, a rise in price will lead to people spending less while a fall in price will lead to people spending more. Price elasticity of demand allows economists to analyse and predict the effect of changes in prices on different markets. We can see an example of this by looking at the debate over cost sharing in health care. Cost sharing in health care Cost sharing is the term used to describe different forms of direct charging for health care services. Increasingly, direct charging is seen as a way of reducing demand but also as a way of raising revenue. How effective is this policy? For instance, in the UK, many people have to pay prescription charges, that is they have to pay a certain amount every time they want to have a prescription dispensed. What has been the effect of this charging? Estimates made by Hughes and McGuire have indicated that demand for prescriptions is rather price inelastic with a mean value of –0.32. This would suggest that prescription charges would be an effective way of raising revenue but not have a great effect on the level of demand. Hughes and McGuire calculated, for instance, that the rise in prescription charges from £3.75 in 1992 to £4.25 in 1993 would have resulted in the generation of an estimated £17.3 million in extra revenue but led to a fall of 2.3 million in the number of prescriptions dispensed. However, their research also suggests that demand for prescriptions is becoming more price elastic as time passes. They found that PED was –0.125 in 1969, –0.22 in 1980, –0.68 in 1985 and –0.94 in 1991. This suggests that raising prescription charges is now likely to raise less revenue but lead to greater reductions in use of prescribed medicines than it did in the past. Other forms of elasticity The concept of elasticity can be applied to the impact of both income and changes in the prices of other goods on quantity demanded. Income elasticity of demand (YED) measures how demand reacts to changes in income. The formula for income elasticity of demand is: % change in quantity demanded % change in income page 28 If the result is positive then the goods are normal, if it

is negative then they are inferior. All the evidence suggest that health care is not only a normal good but that it is income elastic, i.e. rising income leads to a greater % rise in demand for health care. Cross price elasticity of demand (XED) measures how demand reacts to changes in the price of other goods. The formula for cross price elasticity of demand is: % change in quantity demanded of main good % change in price of other good If cross price elasticity of demand is positive then this indicates that the goods are substitutes. If it is negative then the goods are complements. Finally, the concept of elasticity can be applied to supply. Price elasticity of supply (PES) measures how sensitive quantity supplied is to a change in the price of the good. The formula for price elasticity of supply is: % change in quantity supplied % change in price of the good Price elasticity of supply is always positive, reflecting the positive relationship between price and quantity supplied. PES becomes more elastic over time. This reflects the time it takes to switch resources into a market. For instance, in health care the PES is likely to be fairly inelastic in the short run but much more elastic in the long run. Even if price rises significantly it will take time for firms to react and to produce more health care. For instance, to deliver more health care new hospitals will need to be built or existing hospitals extended and extra doctors and nurses will need to be trained. All of this takes time. The concept of elasticity has helped to make our market theory more sophisticated. However, the model still suffers from being rather static. page 29 One thing the market is able to do very well is act as a powerful and efficient information system. Changes in consumers' tastes are quickly communicated to producers via market prices. The search for profits drives producers to offer new products or services and make them in more cost effective ways. An example of this is the way in which consumers' concern over the link between high cholesterol and heart attacks has led to the appearance of cholesterol testing units at chemists and health food stores in the UK. Competition and the need to respond to and, if possible, anticipate consumer demand lead to a system which provides the maximum choice for the lowest possible cost; a system which is flexible, dynamic and efficient. Real world markets Some economists, such as Hayek, argue that in the real world most markets will be in a constant state of flux - always adjusting towards equilibrium but rarely actually reaching it. In this analysis, it is the market's ability to act as an information system that is important rather than its ability to produce a single equilibrium price. Take our market for cosmetic dental services. If the market were free and competitive, then different dentists would offer different mixes of service, and some dentists would be more skilful than others. The skilful dentists offering the services consumers want would have lots of customers and would be able to charge higher prices than their competitors. This would force the other dentists to modify the services they are selling to try to capture back the
3 consumers. This process of competition would be continuous, particularly as other factors influencing demand and supply, such as levels of income or the state of technology, are likely to be changing as well. This kind of analysis has led some economists to argue that health care should be provided by the market not by the state. We look at this in the next section 'Health care - case for a free market'. g. Markets as dynamic systems page 30 What would happen if all health care were bought and sold in the market? The answer to this question is fiercely debated.

Free market economists such as David Green argue that the market would deliver the best possible care at the lowest possible cost. In How to Pay for Health Care. Public and Private Alternatives, IEA Health and Welfare Unit, London June 1997, he contrasts a free market system with the NHS which he regards as a command system financed by compulsion (i.e. taxation). He argues that the command model suffers from a number of problems: * it does not use prices and so has to plan and ration using other tools * it has no way of overcoming the problems of uncertainty and imperfect information * it gives the

suppliers the power to impose unwanted treatments on consumers. No prices The NHS does not use prices in the way a free market would. Green argues that this means that there is no way to evaluate how much people want a particular health care service. Furthermore the lack of prices means that the suppliers have no way of knowing what services to produce and in what quantities. The result is rationing. Neither of these problems would occur in a free market. As Green says, prices provide a way for consumers to compare “the cost of health care with other desirable things, from consumer durables to the education of children. They also send signals to suppliers about the quantity and quality of care being demanded.” This allows producers “to judge how many facilities of various types to provide.” Uncertainty and imperfect information Health care is a market where changes in technology are occuring all the time. How can we decided whether a new way of treating a medical condition should be used or how widely it should be used? In the NHS the planners, the ‘experts’, decide for us. Green argues that the market provides a much better way of answering these questions. He says that it is best to allow many people to try out alternatives in the hope of learning from their experience. This means that the ‘best’ answer emerges from a process of trial and error by a large number of people. ii. Health care - case for a free market page 31 page 32 Power to impose unwanted treatments If we let the experts make decisions for us then we can find that they impose treatments on us against our will. Green cites the example of NHS childbirth services. He argues that “from the 1950s to the 1970s ... under the guise of science in the service of saving life, medical power was used to induce births to fit the convenience of medical employees”. As a result there were more complications and clinical damage. He also states that “Many mothers have reported that during those years they were pressurised into accepting dubious medical advice”. Conclusion Green concludes “A competitive market is not a technical invention which allows pre-defined objectives to be met, but a system which allows scope for human ingenuity to design and redesign ways of improving our lives. It is based on the assumption that we are constantly learning. In particular, it rests on the belief that no authorities can set themselves up in advance on the basis of their training or expertise as the ones who should inevitably have the power of decision.” In an earlier book “Challenge to the NHS”, IEA 1986, Green looked at the performance of the health care market in the US and came to the conclusion that the introduction of a more effective free market in the early 1980s resulted in the emergence of a flexible, cost effective system. He claimed that problems often associated with the American health care system, such as rapidly rising costs and doctors providing patients with unnecessary surgery, were the result of a failure of the free market to operate. Doctors’ monopoly Green argued that the problems of US health care in the 1960s and 1970s were the result of the doctors’ monopoly power over supply. The doctors achieved this partly by restricting entry to the medical profession through limits on entry to medical schools and partly by keeping consumers in ignorance. The doctors’ association, the American Medical Association (AMA), “was able to keep a tight grip on the number of doctors trained and hence to limit the supply of doctors in active practice.” They also maintained the monopoly by preventing doctors from advertising which prevented consumers from gaining the information they needed to make a rational market choice. This monopoly power was fatally undermined in 1982 when the US Supreme Court outlawed the AMA’s ban on advertising. The Federal Trade Commission had already enforced a number of other pro-competition policies on the doctors such as making price fixing by the Michigan State Medical Society illegal. Combined with a significant expansion in the number of doctors, this led to the effective emergence of competition between them. Green argues that the emergence of this effective competition in the health care market has led to exactly the results predicted by the free market model. Since Green wrote this

paper, new types of health care purchaser have grown up in the US, called Health Maintenance Organisations (HMOs). These have more bargaining power over doctors on behalf of the patients who are insured with them. This is seen by many commentators as a further example of the free market working, although others have argued that HMOs restrict patients' access to doctors in order to hold down costs. Case study - health care in the US page 33 page 34 What are the results? As we saw earlier in this Unit a free market will provide an allocation which is allocatively efficient. This means different types of health care in a mixture which accurately reflects consumer demand. It will also be productively efficient and so deliver the health care for the lowest possible cost. Green believes that American consumers now have a much greater choice of where to get their medical treatment and that increased competition has led to the producers of health care becoming more responsive to consumer demand. Another result of the increase in competition, Green argues, has been a significant fall in costs. In other words he claims that American health care has become more productively efficient. He cites as evidence the fall in hospital use and the fall in visits to doctors' surgeries between 1981 and 1985 - "the producers are on the defensive as competition cuts costs and promotes high quality". Fitting the free market model Green believes that the extension of the free market in health care in the US in the early 1980s brought substantial benefits, and in particular delivered exactly the kind of result that the free market model predicts. He does not claim that the American health care system is without problems but he does believe that those problems stem from the effects of state interference rather than the failure of the market. Many economists would totally disagree with Green. They argue that a free market cannot operate effectively in health care. To see why go to the next Unit in this e_source - '-in emergency clinics has given consumers more choice. Questions **The case against a free market'. The growth of new providers of health care such as day surgery centres offering one-day surgery, home health agencies and walk**

a hypothetical demand schedule for GP services in a town where there is no free health service. iii. Questions and activity page 35 Price of GP Quantity of GP consultations consultations demanded per month 0 6 00 £5 400 £10 150 £15 100 £20 90 Table 1 a) Draw a demand curve for GP services using this information. b) If the price of a consultation is £5, what is the total amount that people will spend on consultations? Show this on your graph. c) If the price of a consultation rose from £10 to £20, what would happen to the quantity demanded? 2. Table 2 shows a hypothetical supply schedule for GP services in a town where there is no free health service. Price of GP Quantity of consultations GPs consultations are prepared to supply per month 0 0 £5 40 £10 80 £15 100 £20 150 Table 2 a) Draw a supply curve for GP services using this information. b) If the price of 3 consultations rose from £5 to £15, what would happen to the quantity of consultations GPs are prepared to supply? c) Suppose the costs facing GPs rose by 10%, and this led to a 10% reduction in the quantity of consultations the GPs were prepared to supply at every price. Draw up a new schedule to show the effect of this. page 36 d) Draw a new supply curve to show the effect of the increase in costs (on the same diagram as the original supply curve). 3. Use the information in Tables 1 and 2 to draw a market diagram for GP services. a) What is the equilibrium price and quantity? b) How much revenue are doctors then receiving? 4. Use the information in Tables 1 and 2 to draw a market diagram for GP services. a) A fall in costs causes supply to increase by 70 consultations per month at every price. Illustrate this on the market diagram. b) What is the new equilibrium price and quantity? c) Describe how the market reaches its new equilibrium position. d) An increase in income now causes demand to increase by 70 consultations per month at every price. Illustrate this on the market diagram. e) What is the new equilibrium price and quantity? f) Describe how the market reaches its new equilibrium position. Type in your answer, then click here to

compare your answer with our guide answer page 37 5. Read the passage on the left, then answer questions a) to e). a) Why are more young people demanding plastic surgery? b) What would you expect to happen to the price of plastic surgery as demand grows? c) Try to draw a simple supply and demand diagram to analyse this information. d) How would you expect suppliers to react to the increase in demand? e) Market theory assumes that the consumers are able to make rational buying decisions. Do you think that this applies to cosmetic surgery? Type in your answer, then click here to compare your answer with our guide answer Activity Carry out some further research on the market for cosmetic surgery among the young. Information on the treatments being offered can be found by looking at the adverts in the popular press or magazines. You might also survey your friends to try to identify the factors which influence demand. Is this the short cut to perfection? In the quest for glamour and good looks, more and more youngsters are asking plastic surgeons to give nature a helping hand. Plastic surgery is gaining popularity among the young. At the Poutney Clinic, the average age for a nose job (rhinoplasty) is now just 22, down from 31 in 1985. The average for ear correction is 21. It is not yet as common in Britain as in America, where 640,000 operations were performed last year and where TV programmes like Beverley Hills 90210 suggest you're not allowed to graduate from a Californian high school unless you've got a liposuctioned bum. A 20 year old waiting for a breast enlargement operation at the West Hampstead Clinic when asked why now, replied "We've just got the money. My husband got a big quarterly bonus" Adapted from an article by Robert Leedham, The Guardian 6.9.91 page 38 Why not leave health care to the market? Most people believe that you cannot buy and sell health care like other goods and services. They believe that health care is different. This is what is sometimes called a "common-sense" approach to the issue. Look at the first activity in Questions and Activities to develop this idea further. Economists approach the same question rather differently. They analyse the question of health care and markets from a theoretical perspective. The main theory they use is called market failure. In this unit we will look at the issue of market failure in general and then look in detail at the problems that health care markets face. After that we will look at the issue of equity again. 3. The case against a free market i. Market failure - an overview ii.Problems of risk and uncertainty iii. Unequal information - doctors as agents iv. Consumers as satisfaction maximisers v. Imperfect competition vi. Externalities vii. Equity and health care viii. Questions and activities i. Market failure - an overview You have enough information to estimate how much benefit you will receive from the purchase of a CD. In theory, markets produce the goods and services we want in the right quantities and at the lowest possible cost. This is why markets are so powerful. But in the real world markets do not always work in the way theory predicts. It is possible for a free market to produce a Pareto inefficient result - i.e. the market fails. An information system A market is an information system. We get the right goods at the lowest possible cost because the market is able to transmit all the information about benefits and costs between producers and consumers (see page 19). If this information is less than perfect, then the market will fail. Think about buying a CD. You know what a CD is, and you will also have a good idea of the kind of music on the disc. So you are able to relate your benefit to the price of the CD. If we look at the market for CDs, people will go on buying CDs until the extra satisfaction from the last CD is exactly equivalent to the price of the CD. We have reached the situation where we as a society are consuming the 'right' quantity of CDs in the sense that we are gaining the maximum possible satisfaction from CDs given their price. Why might markets fail? But health care is rather different from CDs. We face very acute information problems which make rational purchasing decisions difficult if not impossible. For instance most people do not know the best way to treat a stomach

ulcer so they would find it difficult to buy such treatment. This analysis also assumes that the only people receiving benefit or satisfaction from the CDs are the people buying them. In other words, the price of a CD accurately conveys the level of satisfaction received. This ignores the possibility of externalities or ‘spillovers’. Think about someone hearing your CD and enjoying it - they are also receiving satisfaction from the disc but the market is unable to provide any information about the benefits they are receiving unless they specifically share the cost of buying the CD. Whenever externalities occur, the market fails. Many economists believe that there are strong externality effects related to health care. For example caring for a sick person can impose financial costs on that person’s family. We discuss externalities more fully in subsection vi of this Unit. Perfect competition An efficient free market requires producers to be operating under conditions of perfect competition. This requires a stringent set of conditions - perfect information, many buyers and sellers, a uniform product and freedom of entry and exit - which ensure that firms are price takers, producing for the lowest possible cost in the long run and only earning normal profits. If producers do not operate in this way and, in particular, if they have a significant power to influence price or the total quantity being produced, then the market will fail. Doctors and other suppliers of health care often have this power. page 39 If we are going to buy health care in a free market, then we have to have enough money to pay for it. But health care is expensive and we cannot predict when we are going to be ill. What makes this worse is that postponing buying health care is often risky. So we face the problems of risk and uncertainty. The market response to this problem is to develop an insurance market to remove the uncertainty and risk from health care spending. We pay an agreed amount of money per year whether we need health care or not. But then, when we need care, the insurer pays the bills, however large they are. So a free market in health care requires an effective health care insurance market. Unfortunately, the health care insurance market itself is often not efficient. Moral hazard and adverse selection both cause significant market failure. Moral hazard Having insurance can change the way in which we act. Imagine you are in a cinema and the film is just about to start. Then you remember that you have left your bicycle unlocked. What do you do? If you have comprehensive insurance which will compensate you against any loss you are much more likely to carry on watching the film. Your attitudes have been changed by the fact that you have got insurance - this is what economists call moral hazard. Moral hazard can affect any insurance market but is a particularly serious problem for health care insurance. Consumers who are insured have an incentive to over-consume health care - to demand operations and treatments which they would not choose if they were directly paying for them. They may also not bother to follow a healthy lifestyle or to get preventative checkups. As a result
3 when they do fall ill, the cost of treatment is higher than it would otherwise have been. Doctors too are affected by moral hazard. They know that the costs of treatment are covered by insurance so the temptation is to over-treat and over-prescribe medicines for their patients. Moral hazard thus leads to an inefficiently large quantity of resources being allocated to health care. ii. Problems of risk and uncertainty page 40 Instead of directly buying health care from doctors and dentists, some people buy health care insurance from companies like British United Provident Association (BUPA) or Norwich Union.

page 41 Adverse selection A company selling health care insurance has to estimate the level of risk accurately

. This is difficult because they will not have complete information on the risk status of the person they are insuring. One solution is to set the premium at an average risk level. But this makes the policy expensive for low risk customers who therefore may choose not to buy the insurance. This process whereby the best

risks select themselves out of the insured group is called adverse selection. Insurance companies know that this is likely to happen so they offer different premiums according to the level of risk and the person's experience of ill health. This is why most companies will offer non-smokers a lower premium than smokers. Offering low insurance premiums to low risk groups, often called 'cream skimming' or 'cherry picking', means high premiums have to be charged to high risk groups such as the elderly or chronically sick. So in a free market, health care insurance is likely to be too expensive for many people, and especially for those most in need of health care. The price of health insurance is often too high for people like this to afford. iii. Unequal information - doctors as agents Doctors use an electrocardiogram (ecg) to monitor a person's heart. Moral hazard and adverse selection help to explain why a free market in health insurance is unlikely to be efficient. However, health care markets face even more fundamental information problems. We are now going to examine the problems caused by unequal information and the consequent role of doctors as agents for patients. Monitoring the heart "The pains in my chest intensified. I tried to remember if I was wearing sensible or frivolous underwear. I knew that within a few minutes all would be revealed. My doctor arrived looking unfamiliar in his Sunday morning clothes, and took me into a side room where he hooked me up to an electrocardiograph machine. There was trouble at t'mill. A lockout. The blood couldn't easily get into the heart. There was an obstruction of some kind. I was wheeled into Intensive Care, more of my frivolous underwear was revealed, I began to feel peculiar and for a split second I thought I was going to die..... So this is what it is like to have a heart attack, I thought. No clasping of the throat and dramatic page 42 Patients are dependent upon doctors for the information they need to make their buying decision. staggering around before falling on the floor, more a sliding into helplessness and then a murky, confused leaving behind of your body" Sue Townsend's description of how she felt as she had a heart attack emphasises the fact that we are often not in the position to make rational purchasing decisions about health care. Rational choices When you go into a shop to buy a CD you have enough information to make a rational choice: you do not need the shop assistant to tell you what you should buy. Going to the doctor is very different. You know that you perhaps do not feel well and that you have particular symptoms, but most people are not able to diagnose their complaint: they want the doctor to do that. What is more, you then rely upon the doctor to specify the treatment - if the doctor says you need an expensive operation then you buy it. In the health care market information is not equally shared between buyers and seller, instead the seller, the doctor, has far more information than the buyer, the patient. This asymmetry of information undermines the separation of buyers and sellers. This situation is not unique to health care but there are a number of factors which make this information asymmetry particularly acute there. Information problems Most medical information is technically complex and so not easily understood by a layman and this is made worse by the fact that many illnesses do not repeat themselves, so that the cost of gaining the information is very high. You could argue that the only way a patient could become fully informed would be by training to be a doctor! The costs of a mistaken choice are much greater and less reversible than in other cases: in the worst situation if you make the wrong decision you will be dead. It is also often difficult to postpone treatment and so virtually impossible to shop around, and anyway how do you judge between different doctors' opinions? Doctors as agents The asymmetry of information makes the relationship between patients and doctors rather different from the usual relationship between buyers and sellers. We rely upon our doctor to act in our best interests, to act as our agent. This means we are expecting our doctor to divide herself in half - on the one hand to act in our interests as the buyer of health care for us but on the other to act in her own interests as the

seller of health care. In a free market situation where the doctor is primarily motivated by the profit motive, the possibility exists for doctors to exploit patients by advising more treatment to be purchased than is necessary - supplier induced demand. Traditionally, doctors' behaviour has been controlled by a professional code and a system of licensure. In other words people can only work as doctors provided they are licensed and this in turn depends upon their acceptance of a code which makes the obligations of being an agent explicit or as Kenneth Arrow put it "The control that is exercised ordinarily by informed buyers is replaced by internalised values" Supplier induced demand So if doctors behaved like some financial advisers or computer salesmen in the past and maximised profits without any limit from a professional code, we would expect supplier induced demand to be a very major problem. But any system of licensure strong enough to provide the internalised values that Arrow talks about is also likely to give the medical profession power to limit the number of doctors operating. Thus licensure and a professional code are in themselves also a source of market failure.

page 43 The dependence of patients upon their doctors is increased by the fact that most people are anxious about being ill. iv. Consumers as satisfaction maximisers Are consumers rational satisfaction maximisers? Market theory assumes that consumers know what is best for themselves - that is they can make choices which will maximise their total satisfaction. If this assumption is wrong then markets will not automatically produce efficient results.

page 44 Economists call the satisfaction that consumers get from consuming a good or service utility. So the extra satisfaction from consuming a bit more is called marginal utility while the total satisfaction gained from consuming the whole amount is referred to as total utility. The satisfaction gained simply depends on the quantity and mix of goods and services chosen. The theory assumes that consumers get more satisfaction from more goods and services but that the increase in satisfaction from consuming another unit - the marginal utility - diminishes as consumption rises. Maximising utility How do consumers go about choosing the mix of goods and services which give them the maximum total utility? They start by thinking about what they like (their tastes/preferences) and then look at how much money they have to spend (their income) and the prices of the different goods and services. They then choose the combination which gives them the highest utility for the money spent. We introduced this idea earlier when we talked about a consumer buying CDs. We argued that "you are able to relate your benefit to the price of the CD. If we look at the market for CDs, people will go on buying CDs until the extra satisfaction from the last CD is exactly equivalent to the price of the CD. We have reached the 3 situation where we as a society are consuming the 'right' quantity of CDs in the sense that we are gaining the maximum possible satisfaction from CDs given their price." "By choosing a particular bundle of goods, people demonstrate that they prefer it to all others; consequently, it is best for them. And, if all people are in their best position, then society - which is simply the aggregation of all people - is also in its best position. Therefore, allowing people to choose in the marketplace results in the best of all possible economic worlds" - Thomas Rice. Another view of consumers However, Thomas Rice in The Economics of Health Reconsidered suggests a range of reasons why this view of consumer behaviour could be mistaken. Here are three of them: 1. The idea that consumer utility just depends on the bundle of goods and services consumed. If this were true then people in rich developed economies ought to be appreciably happier than people in poor developing economies. However, research by Easterlin in 1974 showed that "average levels of happiness are fairly constant across countries; people in poor countries and wealthy countries claim to be equally happy" – Rice. Easterlin's research suggested that utility depended on your relative consumption - so rich

people were happier than poor people in all societies. This means that if you consume more that could reduce my utility because I am now relatively worse off. page 45 2. Traditional theory ignores the issue of how tastes are determined. Evidence from social psychology suggests that tastes are determined by people's past and present environments. So for instance, if you are in a peer group which smokes then you are likely to develop a 'taste' for smoking which will remain even after you have left the peer group. If this is true then it is not clear that satisfying tastes will actually make people better off. In fact "If one believes that tastes are determined in such a way, then it becomes clear that a society might be better off pursuing some goods and services that are not demanded most strongly by the public. This is because people might not know what alternatives are available that will make them better off". 3. Are consumers rational? What do economists mean by the concept of rationality? In a narrow sense they mean that people will behave consistently - so if they prefer A to B and B to C then they will prefer A to C. More widely, they mean that people will behave in a reasonable manner. If consumers are not rational in this sense, then they will not necessarily make decisions which maximise their welfare. Social psychology suggests that people are often not rational in this sense - instead they exhibit what is called cognitive dissonance. In other words, they simultaneously hold two ideas which are psychologically inconsistent and use various forms of self-justification and rationalization to overcome the tension. Take the issue of saving for old age. It is rational to do this but nevertheless often people do not do it. Why not? Well the act of saving forces you to face up to the reality of ageing. If you are scared of getting old then you are likely to refuse to contemplate this and so choose not to save. Cognitive dissonance suggests that people will often not make decisions which maximise their utility. Rice argues that the issues raised above are particularly important in health care markets. Consumers are unlikely to be in a position to appreciate the full range of possibilities available to them and so need expert help to guide them. This is particularly true as many situations affecting health are likely to produce cognitive dissonance. If utility is relative then this suggests that society would be better off with some form of universal provision rather than one based on individual health care purchases. The free market model envisages large numbers of buyers and sellers - all of whom have no power individually to influence the market price. However, a significant proportion of health care is delivered by hospitals and these hospitals can often exercise monopoly power within the health care market in the local area. Monopolies Why should hospitals be able to act like monopolies? The answer is that hospitals have an incentive to grow in size and in the range of services provided. This leads to the emergence of one large hospital in an area rather than a large number of small hospitals. The incentive to grow is falling unit costs - what economists call internal economies of scale and economies of scope. Economies of scale Why should the average cost of providing treatment fall as a hospital becomes larger? There are a number of reasons. 1.A large institution is able to make more use of specialisation. This can involve both people and capital. A large hospital is able to develop specialist medical units employing both highly skilled surgeons and specialist capital equipment. Such a hospital is also able to employ specialised managers and ancillary staff which will allow it to operate more efficiently. 2.A large institution is able to achieve purchasing economies of scale through bulk buying. 3.A large hospital prevents wasteful duplication of facilities. There will only be a limited number of patients with a particular condition needing particular skills and equipment in any one area. Concentrating the treatment in one place allows the most efficient use of resources. Economies of scope In many cases it costs less to provide a range of services in a single hospital rather than have several hospitals each just producing one or two services. For example, emergency surgery and treatment of heart attacks are more cost effectively

provided in a single hospital rather than two separate ones. v. Imperfect competition **page 46 Internal economies** of scale and scope have led to the emergence of large hospitals which often are the only hospital in the area. **page 47 Price maker In this situation, the hospital as supplier of health care services has considerable power to bargain over price.** Instead of being a price taker it is a price maker. In this situation a free market does not lead automatically to a Pareto efficient outcome. In particular, if the hospital is profit maximising then it will set price above marginal costs giving an allocatively inefficient outcome. Also it is likely that the hospital will be productively inefficient, since it lacks the incentive to reduce costs which would be provided by competition. vi. Externalities Externalities or spillover effects provide another source of market failure. Again the problem is related to information. This time the market price does not accurately contain all the information about the benefits and costs of the market transaction. Earlier we outlined how this might occur when a consumer bought a CD. Now we are interested in how this might operate in a health care market. Vaccinations Suppose vaccination against infectious diseases were bought and sold through a free market. You are thinking about the benefits to you of not catching whooping cough – the price you are prepared to pay for vaccination will depend on your personal, private valuation of the benefits you receive. Going from a single consumer to the market, we can analyse the interaction of supply and demand for vaccinations using a diagram. In Figure 12 on the left, DD shows the market demand for vaccinations. The amount of vaccination that private individuals will be prepared to buy at each price will depend upon their estimate of their personal benefit from being protected against whooping cough. In formal terms this means that DD represents the marginal private benefit (MPB) that consumers receive. The market supply of vaccinations is shown by SS. The free market equilibrium is at price P' giving Q' vaccinations. However, when you are vaccinated against whooping cough you are not the only person to benefit. Other people also gain because they are now protected against catching whooping cough from you. This extra or externality benefit is missed by the free market. We can show the effect of this on the diagram. MSB represents the marginal social benefit from vaccination, that is all the benefits received by society. MSB is made up of all the private benefits consumers receive (MPB) plus the additional externality benefits. The Pareto efficient equilibrium is E'' which corresponds to Q'' vaccinations. A free market will thus under-provide vaccinations and this in turn will impose a cost upon society. This cost is shown in the diagram by the shaded area E'FE'', which equals the excess of MSB over the cost of producing the further Q'' – Q' vaccinations. “Selfish” versus “caring” externalities Some economists refer to this type of externality as a ‘selfish’ externality to distinguish it from a ‘caring’ externality. A ‘caring’ externality
3 occurs when individuals receive benefit from knowing that other people are receiving medical treatment. Knowing that someone is in pain simply because they cannot afford medical treatment makes many people upset. In other words, the poor sick person’s pain and lack of treatment causes disutility for other people in society. This helps to explain also why some people are prepared to pay higher taxes to fund health care for all. Again a market demand curve reflecting each individual’s wish to buy care for themselves is unable to express this willingness to pay for external benefits. So a free market will further under-provide health care.

page 48 Quantity of vaccinations

Price of vaccinations P1 E1 Q1 Q11 E11 D D = MPB MSB F S S cost People are prepared to make charitable donations to fund medical care for others because they gain utility from helping others. Figure 12 More than efficiency Efficiency is not everything. We are also concerned with what is fair. If we had a market

distribution of health care, then only those who could afford to pay would be able to purchase it. Most people regard that as unacceptable. This is a major reason why most societies regard health care as different from other commodities. As Donaldson and Gerard put it: “Within most societies there exists, in some form or another, a concern that health care resources and benefits should be distributed in some fair or just way” A concern about equity was one of the main motivating forces behind the creation of the National Health Service (NHS) in the UK. William Beveridge, the architect of the welfare state, argued for a health service which would provide treatment “to every citizen without exception, without remuneration limit and without an economic barrier at any point to delay recourse to it”. Equity has remained a major goal within the UK system. What happens abroad? A concern about equity has also been reflected by other countries’ approaches to health care. McGuire, Henderson and Mooney have pointed out that the introduction of public health insurance in Canada in 1971 “was explicitly stated to be motivated by a concern to make health care utilisation less dependent upon income”. While Blewett has suggested that in Australia “The introduction of Medicare in February 1984 was designed to ensure that all Australians have access to medical and hospital services on the basis of need”. Even in the US, which has the most market orientated health care system in the developed world, the state intervened to provide Medicare and Medicaid to help the poor afford health care. vii. Equity and health care page 49 Should she only get a new hip if she can afford to pay for it? page 50 Market versus State? In practice the question is not a simple choice between a pure free market and a pure command system. Everybody agrees that health care markets fail to some degree and that there are equity considerations. But does this automatically mean society is better off with some sort of command allocation system where the State makes all the decisions? Government intervention also imposes costs and creates inefficiencies. For instance, management structures are often bureaucratic and inflexible, leading to outcomes which do not reflect consumer demand and which are wasteful. viii. Questions and activities Why not leave it to the market? i. Market failure - an overview Activity Why do most people believe that we cannot leave all health care to the market? See if you can discover the answer to this. You could construct a survey to find out what people think about the idea of health care being bought and sold like soap powder. Try to identify what people believe is different about health care. This information will help you understand some of the theory we are about to introduce. You will also need this information to carry out some of the other activities in the unit. Question 1. People over 16 can buy cigarettes legally (i.e. in a free market). They are making a consumption decision based upon their evaluation of the costs and benefits of smoking. a) To what extent is their consumption decision based upon imperfect information? Why might this information be imperfect? b) What might be the externality effects of smoking? Activity Advertising is often defended on the grounds that it provides information for consumers. Take an area like smoking or alcohol and research the extent to which advertising informs or misleads consumers. Questions 2. Look at the following information about the US and other health systems and then answer the questions. * In the US there are around 700 different private health care insurers. * It was estimated in 1997 that 43 million people in the US (16% of the population) had no medical cover. Researchers have found that there is a strong connection between low income, poor insurance and poor health. * The US spends a greater proportion of its GDP on health care than any other developed economy (13.6% in 1998) and yet according to most of the health indicators used by the OECD is no more healthy than other countries. * Countries like Australia, Canada, France and Germany have set up compulsory public health insurance schemes. a) What might explain the connection between low income, poor insurance and poor health in the US? b) What might explain the high proportion of GDP spent on

health care in the US? c) How might the public health insurance schemes avoid the problem of adverse selection? 3. Some economists believe that the information problems facing health care have been greatly exaggerated. “The first question of health economics has always been simple: why not leave health care alone? Some say that it is too complex for buyers to understand, so that they would be ripped off by sellers in a free market. Perhaps they would - but so are buyers of time shares, hot dogs and jewellery. In any case, the complexity is hugely exaggerated. And even where it is not, a similar complexity does not stop a market operating in the servicing and repair of car engines” - Economist 1991 a) Think about your own experience of health care - do you think that the complexity is hugely exaggerated? b) People buying a car or a computer are able to get the information they need to help them make a rational choice from specialist websites and magazines - do you think similar websites and magazines could overcome the information problems associated with health care? page 51 ii.Problems of risk and uncertainty iii. Unequal information page 52 4. Explain how a free market in health care might cause problems for the control of infectious disease. Type in your answer, then click here to compare your answer with our guide answer. 5. a) Does society receive externality benefits from all kinds of health care? b) Analyse why the government might launch a health campaign to persuade people to drink less alcohol. Try to draw an externality diagram to illustrate your analysis. Activities Look at the data you collected in the survey in the earlier Activity on people’s responses to buying and selling health care on a free market. Try to analyse the responses in terms of market failure. Look at the data you collected in the survey in the earlier Activity on people’s responses to buying and selling health care on a free market. Try to analyse the extent to which the people you surveyed were concerned about equity. vi. Externalities vii. Equity and health care page 53 What kind of health care system does the UK have and how does it relate to the economic theory introduced in Units 2 and 3? Most health care in the UK is delivered by the National Health Service (NHS). So what is the NHS and how does it work? The National Health Service - some history The National Health Service was set up by the Attlee Labour government in 1948 following ideas initially set out in the 1942 Beveridge Report. The then Secretary of State for Health, Aneurin Bevan was determined that everybody would have access to the health care they needed regardless of income. He believed that the best way to achieve this was to create a centralised, unitary system. This would have meant that all health care services would have been organised within a single, national service and that structure would have been controlled from the centre. However, opposition from the medical profession forced him to compromise and the structure of the service which emerged in 1948 reflected this. 4. Health care in the UK Aneurin Bevan, who as Secretary of State for Health was responsible for setting up the new service in 1948. i. NHS organisation and structure ii. Has the NHS been successful? iii. Reforming the NHS v. Questions and activities iv. Rationing and cost effectiveness page 54 The NHS - A command approach to health care? In many respects the National Health Service represents a command solution to the problem of allocating health care. On the production side, the state decides how much health care is to be produced and who is going to get it. The state is also directly involved with the production of health care. Most medical facilities such as hospitals are owned by the state and the people working in the NHS are employed by the state, either directly or as independent contractors. Health care in the UK is almost totally financed out of taxation. 98% of the finance comes from general tax revenues. This means that people have no direct choice about whether they pay for health care or how much they pay. However, the other side of this is that all health care apart from charges for items such as prescriptions, eye checks and dentistry is free and available to all UK citizens who need it. In the rest of this unit we look at how the NHS is organised and how well it works before looking in detail at the recent reforms of

the service. i. NHS organisation and structure How is the system organised? The diagram below outlines the structure of the NHS in England since April 2002. The systems in the rest of the UK are similar but differ in numerous details. At the top is the Secretary of State for Health, the government minister in charge of the Department of Health, responsible for the NHS in England and answerable to Parliament. The Department of Health and NHS Executive are responsible for the strategic planning of the health service as a whole. Under the Department of Health are 28 Strategic Health Authorities which plan health care for the population of the region they cover. Secretary of State for Health Department of Health and NHS Executive Strategic Health Authorities Primary Care Trusts NHS Trusts (Secondary Care) Community Health Services GPs Dentists Hospitals Mental Health Services Learning Disability Services Pharmacists Opticians Ambulances Primary Health Care Secondary Health Care Health services are divided between 'primary' and 'secondary'. Primary care services include general medical practitioners (GPs), dentists, pharmacists, opticians, district nursing and numerous other services. These are provided locally, near to where patients live, often in the local high street or even in patients' own homes. The more specialised services, which we use less often and are provided in fewer locations, are called 'secondary care'. This includes not only hospitals but also ambulances and specialised health services for the mentally ill and the learning disabled. Services are provided by hundreds of NHS organisations called "Trusts". "NHS Trusts" supply secondary care. "Primary Care Trusts" provide primary care services. But they also have a second, very important role. Primary Care Trusts are responsible for buying almost all of the health care, both primary and secondary, required by the local poulation they serve. They are allocated funds each year by the Department of Health to do this and they must decide how much to spend on which health care services for the local population. How does this system work? Imagine that you are ill. You visit your GP who diagnoses your illness and if necessary either gives you a prescription or arranges for you to see a specialist at a hospital for a better diagnosis. You may then need to be treated in hospital either as a day patient or as an inpatient. Throughout this sequence you receive the medical care which the professionals – the GPs, hospital doctors and nurses, etc. – consider you need. In other words these health care professionals are acting as your agent to overcome the information problems we identified in Unit 3. But this means that the quantity and type of medical care produced is not normally influenced by your preferences or your willingness to pay – there is no market mechanism whereby your consumer demand can be expressed. page 55 It is difficult to be objective about the NHS. Most people seem to feel passionately about it. Many believe as Bevan did that "no society can legitimately call itself civilised if a sick person is denied medical aid because of lack of means". In their view the NHS makes us a civilised society and they cannot speak too highly of the quality of the care and the dedication of the doctors and nurses. Others take the view expressed by Jonathan Miller writing in the Sunday Times: "It is an enduring eccentricity of the British that we regard our National Health Service as the envy of the world, despite the evidence staring us in the face of slum hospitals staffed by surly trade unionists (the doctors surliest of all) and run by vast legions of bureaucrats accountable to nobody, least of all the customers" Positive achievements The positive achievements of the NHS could be summarised as follows. 1. The NHS is cheap by international standards. For example, the UK spent 7.1% of Gross Domestic Product (GDP) on health care in 2000, most of this on the NHS, while the average for the rest of the European Union (EU) in 1998 (latest data available) was 9.2% of GDP. 2. The level of health in the UK is similar to that in other developed countries. For example, the life expectancy of a male in the UK born between 1990 and 1995 was 73.7 years whereas the average for the EU was 73.2 years. The corresponding figures for females are 79.0 years in the

UK as against 79.6 in the rest of the EU. 3. The NHS has avoided many of the problems of insurance based health care systems: (a) Doctors are either salaried or under contract to the NHS. They are not normally paid a fee for service for NHS work. This has avoided over-supply problems (producer moral hazard and supplier induced demand, see Units 3ii and 3iii). (b) Doctors decide who needs treatment. In particular GPs act as both a guide (to the appropriate specialist) and as a filter. This both helps overcome the problems of consumer ignorance and provides a means of controlling the level of demand. ii. Has the NHS been successful? page 56 (c) Since health care is funded by taxation and is free at the point of use, there are no gaps in the system and no stigma attached to receiving care. (d) The budget for the NHS is determined centrally. The Secretary of State for Health negotiates with the Treasury and the decision is then ratified in Cabinet and voted on in Parliament. This budget determines the quantity of resources available for the NHS and thus provides a way of explicitly setting the maximum amount of health care that can be available to NHS patients as a whole. 4. The NHS has continued to be popular. Klein has commented that "the NHS seems to be a remarkably successful instrument for making the rationing of scarce resources socially and politically acceptable". Barr argues that the NHS has been successful because it has resolved many of the problems which face health care systems – "an institution which arose historically largely for equity reasons works because it goes with the grain of efficiency considerations". Serious problems What about the criticisms of the NHS? Many people believe that the NHS suffers from serious problems. 1. The critics argue that insufficient resources have been devoted to health care so that there is less care than consumers would like. This is a consequence of funding the service from taxation - there is no mechanism whereby consumers can signal their willingness to pay more. According to this view the fact that the UK spends less of its GDP on health care than other developed countries reflects a weakness of the NHS rather than evidence of its efficiency. This also explains why the NHS appears to be in continual financial crisis - waiting lists, closed wards and an inability to treat particular patients or particular conditions all reflect a failure to devote sufficient resources to health care. 2. The system is not sensitive to consumer preferences. Doctors have considerable independence or clinical autonomy. They make decisions about patients' treatment with little reference to either the patients or the managerial structure of the NHS. This has resulted in a system which is unwieldy and difficult to control and not responsive to consumer demand. 3. The NHS is not as efficient as it could be. Some hospitals need to be closed and the resources transferred into community health care. But opponents, including some doctors, have successfully delayed, and in some cases prevented such changes from occurring. They argue that the closure of any hospital is a loss of NHS
3 services regardless of how the resources made available may be used to provide other, more valuable, kinds of health care. page 57 The need for a concentration of hospitals in London with a large number of acute hospital beds has passed. NHS reforms Since it was founded in 1948, the NHS has been subject to numerous reforms and reorganisations. The two most recent sets of major reforms were those started by the then Conservative government in 1989 and more recently those started by the Labour government in 1997. The single most important feature of the 1989 Conservative reforms was the decision to introduce some elements of a market allocation system into the NHS. This 'internal market' divided the health service into providers and purchasers of health care. Purchasers received funds from the government with which to buy the health services that their local population would require. Providers negotiated contracts with the purchasers: providing those services for an agreed sum of money. Both purchasers and providers were NHS organisations. Both were ultimately responsible to the Secretary of State for Health. The 1997 Labour reforms changed various features of the NHS and introduced new bodies such as the

National Institute for Clinical Excellence (NICE), which is discussed in Unit 4iv. The split between purchasers and providers has been retained. But the emphasis since 1997 is less on market forces and more on cooperation between organisations. The two sets of reforms had similar aims. Government objectives 1. To improve the government's ability to control the output of the NHS and its cost. In practice this meant making doctors more accountable to government. Management and control has been a problem since the foundation of the NHS. The heart of the problem was the retention of clinical autonomy by doctors. This meant that no-one was allowed to question the doctors' decisions or their judgement apart from their professional peers. This made it difficult, if not impossible, to set performance targets for doctors or to restrict excessive use of medicines and other health services. iii. Reforming the NHS page 58 2. The government wanted to improve the efficiency of the NHS. This involved improving both productive efficiency and allocative efficiency (see Unit 1). Productive efficiency requires the NHS to produce the maximum possible health care from the resources allocated to it. This means not just using resources to produce existing treatments as efficiently as possible but also switching resources to new more efficient treatments as they become available (this is sometimes called technical efficiency). Allocative efficiency involves making sure that the NHS is supplying the type of health care – treatments, operations or medicines – which consumers want and also ensuring that the correct quantities, i.e. the quantities which consumers want, are produced. How were these reforms expected to work? Put simply, the government hoped that market disciplines allied to a more streamlined command structure would both bring the medical profession under control and improve efficiency. Market discipline and the NHS - efficiency Markets are, in theory, Pareto efficient (see Unit 1). The government hoped that by introducing some market discipline into the NHS through the internal market then efficiency must improve. Specifically, it hoped that by separating the providers from the purchasers there would be a mechanism whereby inefficient providers would lose customers and either close or change their practices to become more efficient and hence more competitive. Money would follow patients and so the efficient, flexible producers would be rewarded with extra revenue. This should encourage the NHS Trusts both to minimise costs and to switch to new efficient methods of treatment as they become available. What about allocative efficiency? Traditionally the NHS has not been responsive to consumer demand. In fact, its ability to ration consumers' demand for health care has been seen as one of its advantages by some economists. Some observers believed that the introduction of GP fundholders would change this. It would allow consumers to express their preferences for a range of hospital and community health services by transferring their GP registrations. So if you were unhappy about the range of health care offered by your GP then you could switch to another GP. Since GPs' incomes reflect the number of patients on their list, this would, in principle, exert a market discipline upon the doctors to provide the care consumers want. In practice, patients are generally reluctant to change their GP, so the market discipline this provides is weak. Equity One major equity issue was the fear that introducing market forces within the NHS would lead to "cream skimming", that is "the deliberate selection of patients both by hospitals and by fundholding practices who were easier or less costly to treat in order to protect budgets". page 59 © Hector Breeze, The Guardian © Jak, The Evening Standard However, no evidence has been found to suggest that this has been a problem. This may reflect the fact that the NHS continues to be managed as a public service rather than as a system where financial targets come before 'needed' health care. page 60 iv. Rationing and cost effectiveness As part of its 1997 NHS reforms, the Labour government created the Nationanal Institute for Clinical Excellence (NICE). The main purpose of NICE is to advise doctors and everyone

else in the NHS about the effectiveness and cost effectiveness of treatments. NICE produces large quantities of guidance. A glance at NICE's website http://www.nice.org.uk will give a quick idea of its outputs. A controversial part of NICE's work is its appraisal of whether particular treatments are cost effective, that is whether they produce sufficient benefits to be worth the cost to the NHS. Benefits include improved quality of life for patients, including relief from pain and disability, as well as increased length of life. Quality and length of of life are often measured together in QALYs, which are discussed in Unit 5 of this e-source. If a treatment is cost effective in NICE's view for a group of patients, then NICE will recommend its use throughout the NHS in England and Wales (the Health Technology Board of Scotland performs a similar function to NICE but for Scotland; Northern Ireland does not have an equivalent body). This is what makes NICE controversial. The government hopes that this will increase the total health care benefits gained from the money the NHS spends. The government also hopes that NICE's work will gradually bring an end to what is referred to in the press as 'postcode prescribing'. This is where some treatments, especially prescribed medicines, are available from the NHS if you live in certain parts of the country but not if you live in others. The problem arises because NHS funds are inevitably limited, so that not all services can be provided that might be demanded by consumers (who under the NHS do not have to pay for them when they use them). This means that the NHS has to limit, or 'ration', the range and volume of services it makes available. NHS purchasers in different parts of the country currently choose to buy slightly different mixes of health care for their local populations. Hence 'postcode prescribing'. NICE represents an explicit attempt to introduce economic considerations into the allocation of NHS resources, in addition to medical judgements. It remains to be seen whether NICE achieves what the government expects of it. Questions 1. The following sequence outlines how the different parts of the NHS are likely to be involved with Susan's pregnancy: • She visits her GP who gives her a check-up and then arranges for her to visit a hospital for a scan and other ante-natal checks. • She then, in consultation with her GP, chooses a hospital for the birth. • As her pregnancy develops her progress is monitored by both her GP and the doctors and midwives in the Maternity Unit of the hospital. • For the birth itself, she spends a couple of days in the hospital Maternity Unit. • After the birth parents and child would be visited at home by a community nurse and would themselves visit the local Child Welfare Clinic at intervals. a) This sequence has involved many of the different elements of the NHS - identify those elements. b) Who is making the decisions in this process? Susan strongly wants to have her child at home but the doctors at the Maternity Unit refuse to allow this, arguing that the risk of complications is too high. c) How could their decision be justified (think of the market failure theory
3 we introduced in Unit 3)? d) Do you think that Susan should be allowed to pay to have the birth she wants at home? Type in your answer, then click here to compare your answer with our guide answer. 2. Why does the NHS not suffer from either moral hazard or adverse selection? Type in your answer, then click here to compare your answer with our guide answer. 3. GPs have sometimes been called the gatekeepers of the NHS. How does their role as gatekeepers act to minimise the information problems consumers face with health care? v. Questions and activities page 61 i. The NHS - organisation and structure ii. Has the NHS been successful? page 62 Type in your answer, then click here to compare your answer with our guide answer. 4. a) Why do waiting lists occur in the NHS? Are they necessarily a sign that the NHS is failing? b) What is likely to happen to waiting lists in the future. Refer to the data in the appendix for your answer. Type in your answer, then click here to compare your answer with our guide answer. Activities A1. Use the data in the appendix to decide whether you think that the NHS has been successful. You might use some of the data to plot your own graphs and look for trends. A2. Use newspapers to research recent cases of health care

rationing. A3. Collect as many newspaper articles as you can on recent decisions published by NICE and carry out your own evaluation of its impact on the efficiency – both productive and allocative – and equity of the NHS. iv. Rationing and cost effectiveness page 63 Our analysis so far has largely concentrated upon the organisation and delivery of health care - the market versus planning. In this unit, we are going to examine and question some of the assumptions behind this analysis. For example, we have assumed that it is possible to obtain the information needed to assess efficiency and that health care and health are effectively the same thing. Information and economic efficiency All our discussions of economic efficiency have assumed that we can obtain accurate information about health care inputs and outputs. Without such information, it is impossible to tell whether marginal costs equals marginal benefit or whether the output is being produced for the lowest possible cost. In practice, this information can be very difficult to obtain. 5. Health care - further questions i. Measuring treatment effectiveness ii. Quality and quantity iii. QALYs iv. Does health care make us healthy? v. Questions and activities The most basic information we need is about the effectiveness of measures to cure or prevent illness. In particular, we need to know whether a specific treatment works. Is it effective in curing the illness? We also need to know how a treatment performs comparatively. Looking at different medical treatments for the same condition, which treatment produces the desired output for the least input? Florence Nightingale recognised the importance of this more than a century ago and she bemoaned the lack of effective information available then: "I have applied everywhere for information, but in scarcely an instance have I been able to obtain hospital records fit for any purpose of comparison". Collecting evidence Information about the effectiveness of different medical treatments can still be difficult to obtain. It was not until the 1960s that epidemiology started to produce effective data on a wide range of causes of ill health (such as smoking) and treatments. Increasing numbers of randomised controlled trials (RCTs) have been undertaken over the last 50 years and have shown that many treatments thought to be beneficial were in fact ineffective and some were positively harmful. For instance, it has been shown that there is no medical gain in admitting patients with acute coronary heart disease to hospitals with coronary care units. Once they have had initial treatment for their heart attack, subsequent treatment can be delivered equally effectively at home. Without such effectiveness information it is impossible to evaluate the efficiency of health care provision. However, this problem can be overcome. Information about treatments can be obtained. All we need is more RCTs. But information about health care outcomes needs to consider quality of life as well as length of life and this is much more problematic. i. Measuring treatment effectiveness page 64 Quality as well as quantity How do we measure the outcome of a medical treatment? Any medical treatment is intended to improve the health status of the patient receiving it. If we take an aspirin to treat a headache, we expect the aspirin to remove the pain and thus make us feel more healthy. This means that measuring health care outputs must involve defining and specifying what we mean by health. In practice, health is usually defined negatively as the absence of illness or disease. However, this ignores the positive aspects of being healthy. The definition of health used by the World Health Organisation (WHO) tries to capture these positive aspects, defining health as: "A state of complete physical, mental and social well-being, and not merely the absence of disease or infirmity". This means that we need to include a measure of quality of life when we are evaluating health care outcomes. Measuring quality of life For instance, suppose we are trying to evaluate the use of chemotherapy for patients suffering from liver cancer. We are likely to find that the treatment can extend life by a number of months or years. That by itself would suggest that the outcome is beneficial. However, if we also found that there is considerable pain and

unpleasant side effects, in other words that the quality of the extra life is very poor, then we may revise our assessment. So to measure health care output, we need to measure both quantity and quality of life produced. Measuring quantity is fairly straightforward. We can use RCTs to compare how long people live following treatment with how long people with the same illness live who receive either no treatment or a different treatment. So we can measure the output of different treatments in terms of life years saved. Measuring quality of life is much more difficult. ii. Quality and quantity page 65 What quality of life? page 66 Grading states of health One approach is to construct a table like Table 3 on the left. We then need to grade the states of health according to how good or bad they are thought to be. Clearly the grading will be subjective (normative) and so will vary from individual to individual. There are a number of different ways in which the grading could be carried out. One is to rank the states of health without any attempt to quantify them – so you simply list the states in order of preference. Another is to try to quantify the utility or disutility involved in each state so that you can say that state 1 is not only better than state 2 but how much better it is. This is technically called a cardinal interval scale. An example of a cardinal interval scale with which we are all familiar is a thermometer. The interval scale has two reference points against which all other states can be compared - the reference points of a Celsius temperature scale are the freezing point and boiling point of fresh water at sea level i.e. 0 degrees C and 100 degrees C. Health measurement scales normally use good health = 1 and death = 0. In the example in Table 3, being confined to bed and in severe pain (distress) is considered to be worse than death. Look at Questions and Activities for an exercise on measuring quality of life. Now look at the next section on QALYs to see how health economists have tried to create a measure to capture both the quality and quantity elements of a health care outcome. Table 3. Grading quality of life relative to perfect health (= 1.000). [Source: Kind, Rosser and Williams in Jones-Lee, The value of life and safety, 1982.] Disability Distress None Mild Moderate Severe No disability 1.000 0.995 0.990 0.967 Slight social disability 0.990 0.9860.973 0.932 Severe social disability and/or slight impairment of performance at work. Able to do all housework except very heavy tasks 0.980 0.972 0.9560.912 Choice of work or performance at work very severely limited. Housewives and old people able to do light housework only but able to go out shopping 0.964 0.956 0.942 0.870 Unable to undertake any paid employment. Unable to continue any education. Old people confined to home except for escorted outings and short walks and unable to do shopping. Housewives able only to perform a few simple tasks 0.9460.935 0.900 0.700 Confined to chair or to wheelchair or able to move around in the house only with support from an assistant 0.875 0.845 0.680 0.000 Confined to bed 0.677 0.564 0.000 –1.486 Unconscious –1.028 What is a QALY?

3 Economists have attempted to capture both the quality and quantity elements of a health care outcome in a single measure by developing the QALY - which stands for quality adjusted life year. For instance, researchers used the matrix illustrated in Table 3 to construct estimates of QALYs gained by different treatments of phenylketonuria (PKU). This is an inherited disease which affects patients' digestion. They found that treating new-born infants affected by PKU with a special diet would improve health by 47.3 QALYs - a dramatic improvement. QALYs offer the possibility of carrying out effective cost benefit analysis and thus providing the information we need to make efficient decisions (Table 4). The National Institute for Clinical Excellence (NICE) collects evidence on the cost per QALY produced by the treatments it appraises (see Unit 4iv). Some "lifesaving" treatments are unpleasant, do not extend life much and the time remaining is full of pain and discomfort, while other treatments may not save lives but are not expensive and considerably improve the quality of life of the patient. An efficient allocation might shift resources from the first type of treatment to the second. Problems with QALYs QALYs provide the best attempt so far to solve the problem

of measuring health care outcomes but they still suffer from a number of serious problems. A key question is who is to make the subjective choices which determine the QALY? Is it health professionals, the general public or patients who have experience of the particular medical condition and treatment? Experiments have shown that the value of a QALY can change radically according to who is making the choices. Other problems include the fact that the responses given are to hypothetical situations and so may not accurately reflect people’s real decisions, and the fact that valuations are influenced by the length of the illness and the way in which the questions are asked. Finally, QALYs are likely to undervalue health care because they do not capture the wider benefits (externalities) which may be gained, for example, by a patient’s family and friends. Developing QALYs and extending RCTs promises to provide the information we need to judge whether health care is being produced efficiently or not. A more fundamental question is whether health care is really that vital for health? iii. QALYs page 67 Table 4 Treatment £s Cost/QALY Cholesterol testing and diet therapy 280 Advice from GP to stop smoking 350 Heart pacemaker implantation 1,420 Hip replacement 1,520 Coronary artery bypass graft 2,700 Kidney transplant 6,080 Breast cancer treatment 7,460 Heart transplant 10,110 Continuous ambulatory peritoneal dialysis 25,630 Neurosurgery for brain tumour 139,040 Source: Mason, Drummond and Torrance, British Medical Journal, 27 February 1993. At first sight this might seem to be rather a strange question. If health care did not make us healthy why would we demand it? Clearly most people believe that there is a strong and positive link between the two – we demand health care because we want to be healthy and we believe that health care will make us healthy. But are we correct? One way of finding out is to use data on life expectancy at birth to gain a picture of how and why health has changed historically. A man born in 1841 in England and Wales could only expect to live 40.2 years and a woman 42.2 years, but by 1998, a man’s life expectancy had increased to 75.1 years and a woman’s to 80.0 years. These figures indicate a dramatic improvement in the general level of health over the period. Research has shown that this was mainly due to a reduction in infectious diseases carried by air, water and food – diseases such as tuberculosis, cholera and gastro-enteritis. Why has the death rate fallen? What caused the death rate from these diseases to fall so dramatically? Was it improvements in health care such as new drugs, better medical treatments and more doctors? These things helped but the main factors were improvements in nutrition and in hygiene. Better nutrition made people more able to fight disease with their bodies’ own defence mechanisms, while improved hygiene due to proper sewage disposal, clean water and the development of techniques such as pasteurising for milk helped eradicate diseases carried by water and food. Health care played a relatively minor role in this process. Diet and lifestyle But surely modern medical techniques and the development of new operations and new medicines have changed this picture? Again the evidence suggests yes but not greatly relative to diet and other factors. Figure 13 on the left shows current statistics on deaths from ischaemic (coronary) heart disease from a range of countries. If the quantity and quality of health care was a key variable then one would expect relatively poor countries such as Portugal to perform worse than relatively rich countries such as Norway. In fact the main variable appears to be diet. Countries at the top of the heart disease league all tend to be large consumers of dairy products and saturated animal fats while those at the bottom of the table tend to use vegetable oils and eat large quantities of fruit and vegetables. iv. Does health care make us healthy? page 68 Diet is a key influence on health. Figure 13. Deaths from ischaemic heart disease. 0 50 100 150 200 250 Korea (1997) Japan (1997) France (1997) Spain (1997) Portugal Italy (1996) Switzerland (1996) Belgium (1994) Luxembourg (1997) Netherlands (1997) Greece Canada (1997) Germany Denmark (1996) Australia

(1995) Sweden (1996) USA (1997) Norway (1996) Austria England and Wales New Zealand (1996) Poland (1996) Northern Ireland Finland (1996) Czech Republic Ireland (1996) Scotland Hungary Females Males Note: Year is 1998 unless stated otherwise. Source : OHE calculation based on WHO Mortality Database (WHO). Rates per 100,000 page 69 Smoking is also a major factor. In the UK generally, coronary heart disease and cancers are the main killers, together accounting for approximately half the deaths from natural causes in England and Wales in 1995. Coronary heart disease and cancer are strongly associated with smoking. Heavy smokers (over 40 cigarettes a day) are four times as likely to die from coronary heart disease as non-smokers, moderate smokers twice as likely, while 40% of all cancer deaths and 90% of lung cancer deaths are due to cigarette smoking. So if we want to be healthier, perhaps we should change our diet and give up smoking rather than visit our doctor and demand health care. Modern health care In fact, this misses the point of much modern health care. Most treatment provided by doctors and hospitals is not concerned with saving people's lives. Modern developments in medical technology, surgical techniques and medicines have enabled doctors to treat many conditions which previously caused patients considerable pain and discomfort. For instance, stomach ulcers can now be controlled and managed by modern drugs. This helps to explain why the demand for health care seems to be infinite – everybody wants improvements to the quality of their life. So we are still faced with the problem of deciding how much health care we should have. Some people argue that we can never have too much – we should aim for the highest level of health care provision possible. But this is to confuse health – a basic human right – with health care. As we have seen, health care is, in most cases, just like any good or service which gives consumers utility. If this is the case, then the optimum level of health care will be the efficient level – the quantity where marginal cost equals marginal benefit. This will give us the maximum satisfaction from our scarce resources. The questions that remain are those which we have discussed throughout this e_source – which mixture of market and planning will produce the most efficient allocation and how should the health care which is produced be distributed between different people (equity)? People are now able to have their hips replaced which both removes pain and gives them renewed mobility. Questions 1. Look at the health measurement matrix below. The vertical axis describes states of disability while the horizontal axis describes the level of distress the patient is experiencing. What do we mean by the level of distress? The term distress is an attempt to capture both the physical and mental effects of being ill. This is very subjective but severe distress might mean considerable, continuous physical pain with perhaps a high level of anxiety and fear. Each combination on the matrix needs to be given a numerical score so that a cardinal interval scale is created. 3 The reference points are healthy = 1 and dead = 0. a) Complete the matrix using your own values based on your own personal preferences. Each number should be to no more than three decimal places, e.g. no disability/ no distress will score 1.000, while confined to bed/mild distress might score 0.564. Try to be as consistent as possible. The scores are likely to reflect your own personal experiences – particularly experiences of illness. Note that it is possible to have a negative score if you feel a particular combination of disability and distress is worse than death. Fill in the table, then click here to see the values that researchers got. b) Compare your scores with others in your group and discuss why different people have come to different conclusions. v. Questions and activities page 70 Disability Distress None Mild Moderate Severe No disability 1.000 Slight social disability Severe social disability and/or slight impairment of performance at work. Able to do all housework except very heavy tasks Choice of work or performance at work very severely limited. Housewives and old people able to do light housework only but able to go out shopping Unable to undertake any paid employment. Unable to continue any education. Old people confined to

home except for escorted outings and short walks and unable to do shopping. Housewives able only to perform a few simple tasks Confined to chair or to wheelchair or able to move around in the house only with support from an assistant Confined to bed Unconscious ii. Quality and quantity page 71 2. Researchers have estimated the marginal cost per QALY to be gained from a number of health procedures. Hip replacement surgery will produce one QALY for £1,520 while gaining one QALY from screening for breast cancer will cost £7,460 (Mason, Drummond and Torrance, 1993). a) How might society re-allocate resources between hip replacement surgery and screening for breast cancer to achieve a more efficient outcome? (Remember that the most efficient allocation of resources is when the marginal cost paid is equal to the marginal benefit or utility received). b) Why might many people be unhappy with this? Type in your answer, then click here to compare your answer with our guide answer. Activity A1. Use the data in the appendix to look for evidence that improvements in health in the UK have been due to factors other than health care. iii. QALYs iv. Does health care make us healthy? page 72 The Office of Health Economics (OHE) produces a compendium of statistics on a wide range of data relating to health care in the UK. The compendium is available on CD ROM or in printed format. We have selected six sets of data that are particularly relevant here. Each data set is presented as a table and a graph and is also available for download in CSV (comma separated variable) format, allowing it to be used in a spreadsheet. Appendix. Statistics i. UK population trends ii. The aging UK population iii. Life expectancy iv. Birth rates and child mortality v. NHS pay and prices vi. NHS cost by age group i. UK resident population trends page 73 Note: *projections from 2001 are based on 1998 mid-year estimates. Sources: Annual Abstract of Statistics (ONS) National population projections 1998-based (ONS) 19461951 19561961 1968 1971 19761981 19861991 19962001 20062011 20162021 20262031 20362041 2048 2051 10,000 1000 500 100 50 Index (log scale) 1948=100 Projections* >=85 years >=75 years >=65 years 15 to 64 years All ages Year All ages 15 to 64 Over Over Over years 65 75 85 years years years 1948 100.0 100.0 100.0 100.0 100.0 1951 101.698.7 102.8 105.9 100.0 1956104.0 97.3 105.6117.6125.0 1961 106.9 96.1 109.3 123.5 150.0 1966 110.9 95.7 113.1 126.5 175.0 1971 113.2 92.9 123.4 138.2 225.0 1976113.8 93.3 132.7 150.0 250.0 1981 114.2 95.5 141.1 173.5 275.0 1986115.0 97.5 143.0 191.2 300.0 1991 117.0 96.6 146.7 202.9 400.0 1996119.0 96.4 147.0 209.7 453.6 2001 121.4 97.4 146.0 218.2 489.3 2006123.4 99.0 144.0 221.5 503.3 2011 125.4 99.2 154.4 225.4 542.3 2016127.697.3 169.5 234.8 574.3 2021 129.8 95.4 178.6257.0 614.6 2026131.693.8 192.5 294.4 671.2 2031 132.7 91.1 211.5 313.3 775.5 2036133.2 89.5 225.4 341.6923.8 2041 133.3 89.4 228.5 381.3 969.2 2046132.9 89.7 227.3 405.8 1071.9 2051 132.3 89.4 227.9 401.3 1223.7 page 74 ii. The aging UK population Note: *projections from 2001 are based on 1998 mid-year estimates. Sources: Annual Abstract of Statistics (ONS) Population Trends (ONS) National population projections 1998-based (ONS) per cent of UK population projections* 19461956196619761986199620062016202620362046 20% 15% 10% 5% 0% 65 to 74 years 75 to 84 years 85 years and over Year 65 to 74 years 75 to 84 years Over 85 years 1948 7.2 2.9 0.4 1951 7.3 3.1 0.4 19567.4 3.4 0.6 1961 7.5 3.6 0.7 1966 7.8 3.7 0.7 1971 8.5 3.9 0.9 19769.1 4.2 1.0 1981 9.2 4.7 1.1 19868.8 5.3 1.3 1991 8.8 5.4 1.5 19968.6 5.3 1.8 2001 8.2 5.5 2.0 20068.2 5.5 2.0 2011 8.9 5.5 2.2 201610.1 5.7 2.3 2021 10.4 6.3 2.5 202610.6 7.3 2.7 2031 12.0 7.63.1 203612.5 7.9 3.7 2041 11.5 9.1 3.9 204610.5 9.5 4.3 2051 10.7 8.8 4.9 Growth of UK elderly population as a percentage of total UK population page 75 iii. Life expectancy in England and Wales Notes: p = 2000-based population projections * Figures are based on English Life Tables ** Figures are based on Abridged Life Tables *** Figures are based on future lifetime Source: Government Actuary's Department years of life remaining 90 80 70 60 50 40 30 20 10 0 1841* 1860* 1880* 1900*

LEARNING TO LIFE WITH HEALTH ECONOMICS

Chapter I Introducing the learning materials Learning to live with Health Economics Edited by H. Zöllner, G. Stoddart and C. Selby Smith WHO Regional Office for Europe Copenhagen, 2003 Key Words HEALTH ECONOMICS DELIVERY OF HEALTH CARE – economics HEALTH POLICY – economics SOCIOECONOMIC FACTORS HEALTH SERVICES ACCESSIBILITY HEALTH CARE REFORM COST–BENEFIT ANALYSIS – methods OUTCOME ASSESSMENT (HEALTH CARE) PROGRAM EVALUATION – methods FORECASTING TEACHING MATERIALS

agreement. The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters. The World Health Organization does not warrant that the information contained in this publication is complete and correct and shall not be liable for any damages incurred as a result of its use. The views expressed by authors or editors do not necessarily represent the decisions or the stated policy of the World Health Organization. EUR/03/5042783 Contents Learning to live with Health Economics I - 1 1.1 Background 1 Health21: the health for all policy framework for the WHO European Region. Copenhagen, WHO Regional Office for Europe, 1999 (European Health for All Series, No. 6). This set of health economics learning materials has been prepared by the WHO Regional Office for Europe to assist health policy decision-makers, advisers, planners, managers, practitioners and other concerned groups. Health policy and practice is a large and complex area. It can benefit from a range of perspectives, including that of economics. Economics is particularly useful for decision-makers, since resource limitations and financial constraints apply in all health systems and at all levels. There are always more useful activities competing for priority than can be resourced; and this has significant implications for resource allocation decisions, health outcomes and equity. The purpose of this set of learning materials is to assist these various potential audiences to benefit from the valuable insights which can be afforded by the discipline of economics, broadly defined. It is intended to be complementary to other material on health economics, which is already available. Together the modules cover various aspects of the public policy process, the dimensions of health policy content, and their sustainable implementation and effective practice. All of these matters would benefit from the application of the concepts and reasoning, as well as the analytical techniques, which economists can bring to the challenges of health policy, practice and performance. Often, these need to be practised in collaboration with other colleagues, both in terms of analysis and approach (e.g. epidemiology), and also in terms of application (e.g. policy-makers and practitioners). Much of medicine focuses on individual patients, their problems and their treatment. Economics, however, tends to fit especially with those aspects of health care, health systems and health outcomes (such as sociology, political science or epidemiology) that are concerned with groups, for example people and patients and the contexts in which they live, work and play. Who should get priority in relation to the use of scarce resources? What alternative approaches or treatments are available? How do their costs, benefits and patterns of distribution vary? What implications follow for resource use and health outcomes? The economic approach fits particularly well with the "public health" view of the issues, problems and possible solutions, including the overall health for all strategy and specifically HEALTH21, the health for all policy framework for the WHO European Region, which was adopted by the World Health Organization Regional Committee for Europe in 1998.1 The individual modules in the overall set of learning materials are concerned with a broad range of matters. For example, they consider: the general relevance of economic concepts and

economic policy issues to the health field; health sector and related issues facing countries which are in economic I - 2 Learning to live with Health Economics 2 World health report 2000. Geneva, World Health Organization, 2000, p. 119. and political transition, especially those in central and eastern Europe and in the newly independent states of central Asia; the challenges which face all countries in one form or another in restructuring and reorienting health care and related systems at the levels of policy, management and practice; the determinants of health outcomes (only some of which lie within the direct responsibility of health ministries); the concept of health as individual and social capital and wealth; and a range of specific topics, including financing systems, costing, economic evaluation, the development and diffusion of health technology, economic modelling and forecasting, frameworks for the systematic consideration of public health management, approaches to overall policy analysis, and privatization. The learning modules have been prepared with a practical purpose in mind: to assist various groups of potential users. They are complementary to material available elsewhere, for instance through the World Bank or the wide range of textbooks and courses on offer. No attempt has been made to duplicate what is already available (although there is inevitably an overlap in relation to some topics) and nowhere else does there exist a set of learning materials equivalent to this WHO set. The range of matters addressed in these learning materials widens the scope for the productive application of economic concepts and tools. This includes broadening an earlier concern primarily with health care (such as hospitals or doctors) to an appreciation of a multisectoral field with many varied contributions to health outcomes and overall wellbeing at both the individual and societal levels. The hope is that the availability of these learning materials will enable the various potential users to make a more extensive and more prudent use of economic concepts and tools, to be better equipped to judge what are appropriate or inappropriate circumstances, and to appraise more perceptively the quality and relevance of advice they receive from economists. Two related points are emphasized. First, the learning materials reflect the role and modus operandi of WHO. For example, they focus on stewardship, including public health and equity, because “ultimate responsibility for the overall performance of a country’s health system must always lie with government”.2 WHO has increasingly emphasized the importance of adopting a multisectoral and interdisciplinary approach to the analysis of health issues and the development of appropriate solutions. WHO tends to adopt a medium-term approach, encouraging adaptation to varied situations and sustaining a coherent vision of improvement, while remaining realistic about current circumstances and the practical obstacles to achieving better health status outcomes and equity. Its close interaction with individual Member States helps it stay in touch with varying developments, appreciate the wide diversity of circumstances in different countries and regions, and facilitate comparisons, as well as temper its idealistic aspirations with a strong dose of realism. In current circumstances it is only appropriate that the learning materials are influenced by a deep sympathy for the difficulties being faced by many countries in central and eastern parts of the WHO European Region. Secondly, there is a wide range of potential users of the learning materials. Section 1.2 of this Introduction considers in more detail who these are, and Section 1.3 looks at how they might use the material. It follows that the basic set of learning materials has to be capable of being effectively and relatively easily adapted to the background, circumstances and needs of different audiences. There is also an important role for those who will conduct the learning sessions (the tutors). The contribution of these tutors to the effective use of relevant material, including supplementing it with local knowledge and case studies wherever possible, is vital to the maximization of learning for participants (Section 1.4). Section 1.5 considers the use of web-based material, how it might

be supplemented and how, in time, it might be updated. Learning to live with Health Economics I - 3 1.2 Users of the learning materials Who might use the learning materials, accepting immediately that these will need to be selected, assembled as appropriate, presented and supplemented (perhaps substantially) by the tutor for each individual audience? Four broad categories have been identified, although in each case further subcategories could be developed. First, there are the most senior policy-makers – ministers, their advisers, concerned members of parliament and the most senior officials, such as the head of a country's health agency, and their senior assistants. Such people are extremely influential in relation to health policy, the framework within which health practice occurs and the relationships with other important players (e.g. the finance ministry, other ministers, the private sector or the media). They are generally not economists, they are extremely busy, and they work in an oral environment, utilizing other people's contributions but rarely writing much themselves (although they may rewrite a lot). They also tend to be interacting, on complex problems, with many stakeholders and audiences simultaneously; thinking in a range of time dimensions, and seeking to match the overall vision with the practical realities. Secondly, there are the administrators and managers who work in health-related facilities or on health-related programmes. The culture of health care managers at this level differs significantly from the culture of the civil service. They tend to be more focused on action and practice, compared to the civil servant's focus on policy and process. In decentralized health care systems, or where command and control systems permit some local discretion, managers typically are required to develop and implement appropriate policies rather than merely adopt central directives. In other circumstances their roles are more circumscribed and greater emphasis is given to carrying out instructions from superiors. The use by such people of the learning materials reflects their more circumscribed role. Their influence is more restricted to their own particular institution, region and area of activity or specialized sub-unit. However, within this restricted area they may nevertheless have significant power and the capacity to allocate and reallocate resources. They can also benefit from understanding more fully the wider environment within which their particular activities are embedded. Thirdly, there are the health care professionals who deliver services to patients or groups of people. In the health system decisions are constantly being made by professionals, such as doctors, nurses, pharmacists, dentists and therapists. Indeed, the relationship between providers and patients in health care implies that decisions made by both users and providers affect health care processes and outcomes. This group is much larger than either of the two previous groups. In many cases, professional practitioners may believe that care of the individual patient is central and that economic considerations I - 4 Learning
3 to live with Health Economics are not important. In fact this is not so. Even the individual practitioner who treats one patient rather than another, or in one way rather than another, can affect outcomes, for example in terms of the cost–effectiveness of care or equity. The fourth group is more diverse. During the preparation of the learning materials it was envisaged that this group would include people with an interest in, concern for and perhaps involvement with the health sector. Examples would include people who sit on the boards of management of health care facilities (hospitals, community health centres or old people's care facilities), or those who, while they do not have direct management responsibilities in relation to health, nevertheless have a continuing interest, such as trade union officials, many nongovernmental organizations, and religious and charitable organizations. It could also include media organizations, including TV, radio and print media journalists, presenters and opinion-formers; officials in consumer organizations concerned with health; members of lobby and special interest groups (e.g. importers, manufacturers of health technology or pharmaceutical firms); and officials in regulatory agencies, including those

outside health but in related areas such as education, transport, occupational safety at work or the environment. This category of potential users of the learning materials is extremely heterogeneous. It may not be easy to gain access to them, and it will certainly require a diversity of approaches if they are to derive the maximum benefit from the learning materials. Often, they will be particularly concerned with one part of the health system, for example those who sit on the board of management for a hospital or community health centre. Others will have wider interests, for example county councillors with health responsibilities or concerns, members of regional advisory bodies or those who participate in the formulation of health policies in nongovernmental organizations, consumer groups, trade unions or political parties. Sometimes their concern with health issues will be episodic, such as for many TV, radio or print media presenters. In other cases it may be more continuous, including for specialized reporters and presenters. Learning to live with Health Economics I - 5 1.3 Use of the learning materials As Section 1.4 below emphasizes, the learning materials need to be carefully considered and customized for the different potential groups of users and for their particular circumstances and interests. Despite this, there are clearly broad differences between the four main groups of potential users outlined in Section 1.2. These differences relate particularly to the approach which is likely to be most appropriate for them, and the parts of the learning materials in which they are likely to be most interested. The first group comprised the most senior policy-makers, at the political and bureaucratic levels. They seek to establish appropriate parameters for decision-making by practitioners, to manage intersectoral relationships, and to obtain sufficient resources. For them it is particularly important to know what the economics perspective can add to their knowledge or capacity. Where is it useful and where not? How does it interact with other issues of importance to them (e.g. in intersectoral relationships, in discussions with key stakeholders, in negotiations with the finance ministry)? How are they to appraise the economic component of the advice they receive or identify when it should be present but is missing? Given the multifarious other demands on their very limited time, firm choices will need to be made about priorities, taking account of how much they can be expected to absorb and retain and to avoid overload. Probably they will tend to be more interested in the “thinking” modules than in the “practical” modules (except, perhaps, when a current issue dominates their thinking). The conceptual framework adopted by health economists can be useful to them, for example in understanding the balance between costs and benefits, the differing values of individuals and groups (including for risk and uncertainty) or efficiency and equity, the distinction between the average and the margin, the discounting of future costs and benefits, the importance of who gains and who loses, and X-inefficiency where production possibilities are not fully realized. In general, such people will be more interested in the economic way of thinking than in the minutiae of techniques and approaches. Clearly, this audience will not wish to work systematically through the full set of learning materials. The tutor will need to tailor the approach to their particular concerns, probably in a very limited time. Ideally, matters of pressing immediate interest to them can be used to develop the broader insights which will be of benefit to them in the longer term. For example, what are the incentives built into current arrangements or proposed changes, and how are these likely to alter the behaviour of important stakeholders and thus the health (or other) outcomes which emerge over time? It may be appropriate for the tutor to consult the users prior to the learning materials being used and ascertain where their special concerns lie. He or she can then develop a I - 6 Learning to live with Health Economics programme which addresses them, but which leads into discussion of more fundamental concepts and related approaches. The second group are the administrators and managers working in health care, the

wider health system or in health-related programmes (e.g. reducing road traffic accidents through work in engineering and road construction, justice or police agencies). They could find it useful to know about such factors as the determinants of health, individual and social health capital, the framework for the analysis of public policy, and likely future developments as a broad background to their work. However, they tend to focus on current and possible future problems which affect them, where they have some influence and where they bear some responsibility. They are likely to be more interested in some modules, such as administration and management, or the bargaining and negotiation elements of the module on policy analysis, than the members of the first group. Like them, however, they will benefit from understanding the economic way of thinking, the criteria economists use (especially efficiency and equity), where economists' advice could be useful and how it can be most effectively used in their environment. For example, they may be interested in costing, having a better idea of the concepts underlying health outcome measurement, how health technology is developed and diffused, and how economic evaluation, modelling and forecasting are undertaken. They are unlikely to carry out studies themselves but will benefit from knowing how these are done, what are their strengths and weaknesses, when to use them, and what to beware of in any studies they consult or commission. The third group covers the large number of health professionals who deliver services to patients and groups of people. The members of this group can benefit from the learning materials in two ways. First, they can gain a better appreciation of the broader context in which their particular contribution to health, costs, benefits and processes takes place. They may find this interesting in itself. More important, it provides them with possibilities for more effective practice in the future, including a more proactive approach, resulting in more efficient and equitable outcomes. Each individual has a contribution to make, even though it can seem very minor in a large system. These learning materials can assist professionals, both individually and in groups, to make their contributions more effective. Specific modules can also help in more direct ways (depending, of course, on the particular work and circumstances of the individual practitioner). For example, costing could assist them, as could a better understanding of how health technologies are developed and diffused, economic modelling and forecasting, aspects of primary health care in a changing society, bargaining and negotiation, administration and management. At a more general level their practice with particular patients or groups might be informed, and subsequently improved, by a greater understanding of the basic determinants of health, individual and social health capital, and the respective roles for the individual, the family, the health care system and the broader society. To recognize that one cannot control everything does not mean that one can
4 influence nothing. The fourth category of potential users is very heterogeneous. If they have special interests (e.g. if they are representatives of pharmaceutical companies, manufacturers of health technology or members of hospital boards) or are concerned about a specific issue (e.g. general journalists, members of consumer groups or trade union officials with members who are affected), these will need to be emphasized in the presentations if the audience is to become involved and remain interested. For example, some users are likely to be especially concerned with financing issues. Even if wider aspects of the learning materials are to be included in the tutor's presentations, it may often be appropriate to start with the area or issue which is of immediate interest and only subsequently proceed to more general aspects. Secondly, even if their initial interest is relatively narrow, participants may realize the benefit of using Learning to live with Health Economics I - 7 the opportunity of the learning sessions to explore the wider contributions which a health economics perspective can make to related matters. In such cases it may be desirable not to constrain the content of the discussions too tightly at the beginning. A more flexible

approach can allow interests to develop among the group and be followed up in more detail, as appropriate. Thirdly, some individuals or groups may, from the beginning, see value in using the learning materials to develop a more coherent overall understanding of what health economics can contribute for them personally, the institutions with which they are involved, and the issues with which they are primarily concerned. Some will appreciate, even initially, that many of the matters considered in the learning materials are interrelated and that they can only be considered in isolation at some cost. In general, it is desirable that all the members of this group who use the learning materials receive at least some idea of the broad approach of health economics, some of the tools and approaches it can offer (and where they are likely to be helpful), the challenges facing health systems in most (if not all) European countries, the special circumstances of their own country and sector, and the intersectoral and interdisciplinary nature of health change, and understand health outcomes in terms of individual and social processes. Clearly, the degree to which this broader use of the learning materials could be incorporated into the discussions for a particular group would vary, depending on a range of factors including the skill of the tutor. I - 8 Learning to live with Health Economics Learning to live with Health Economics I - 9 1.4 The role of the tutor The role of the tutor is critical if the learning materials are to be used effectively. Partly this is because the users will have a wide diversity of knowledge, backgrounds and interests. They will come from the health care sector, other parts of the health sector and other sectors. They will be drawn from various levels of both the public and private sectors, ranging from ministers to relatively junior professional workers. Some will be employed in health-related activities, other will be commentators on them, and others will be interested observers. The learning modules do not purport to cover all possible relevant topics. Indeed, this would be impossible. Consequently, it is critical that tutors are aware of as many other relevant sources as possible and that they bring them to the attention of the users. Some material will relate to concepts and other topics which are either not covered in the learning materials, give a different perspective or provide complementary material. For example, there is extensive material available through the World Bank, textbooks, relevant journals and courses which could be useful in amplifying and extending, and especially complementing, the material presented here by WHO. There are nearly 900 000 000 people in the countries included in the WHO European Region. They have some things in common. For example, 18 of the 20 countries in the world with the largest proportion of elderly people are located in the European Region. However, in other respects there are great differences. For example, in 1996 per capita gross domestic product ranged from US $255 (in the Republic of Moldova) to US $44 693 (in Luxembourg). Since 1996, the majority of countries in the Region have shown some increase in life expectancy at birth, but for the Region as a whole average life expectancy fell from 73.1 years in 1991 to 72.4 years in 1994. For every 1000 live births, an infant born in Finland has ten times the chance of survival compared to an infant born in Tajikistan. Even in western Europe there are concerns about increasing disparities in income, persistently high unemployment and a growth in the health gap between rich and poor. Armed conflicts, as in the Balkans, the central Asian republics and the Caucasus, have resulted in large numbers of displaced persons and refugees throughout the Region. Many of the 51 Member States continue to struggle with the consequences of economic, social and political transitions. In some cases progress has been halting, in others it has been negative. For example, there has been a re-emergence, particularly in the newly independent states of the former Soviet Union and in some countries of central and eastern Europe, of infectious diseases, such as tuberculosis, malaria, typhoid, hepatitis A and cholera. There has been a dramatic increase in sexually transmitted diseases, leading to a rise in the

numbers of people infected with HIV and syphilis. Against the background of these differences it is a critical responsibility of I - 10 Learning to live with Health Economics tutors to ensure that the learning materials are used in a way which is appropriate for the participants in their particular context. In many – if not all – cases the material should be supplemented with local experience and case studies and presented with sensitivity to local traditions, circumstances and values. Learning materials which have been developed against the background of north American or western European experience are not necessarily appropriate without adjustment to other countries in the European Region. Indeed, it has been suggested that, for example for some countries in transition, there may be mindsets, attitudes and expectations derived from their recent experience which could lead to misunderstandings relating to material in some of the learning modules. These may change over time but be powerful at present, at least in some countries and in relation to some issues. A colleague from central and eastern Europe, commenting on an earlier draft of the learning materials, suggested that an exercise might help to articulate these matters, facilitate a more open discussion and, by confronting them directly, assist in removing the misunderstandings. Exercise To what extent are the following statements commonly expressed in your country, or other countries of which you are aware? To what extent are they accurate? If they are held, what implications do they have for health policy, health practice and health status outcomes? If they are not accurate, how can they be confronted in the minds of different stakeholders who hold them? • The declining real value of public health expenditure is the cause of (all) our problems. • An increase in health costs, as observed in many western European or north American discussions, would be a good thing. It would definitely be better than our present state of affairs. • Individuals are responsible for their own decisions, including health decisions, in the new society which is emerging, with less central direction and control. Therefore, poor health outcomes are the individual’s own responsibility and do not justify collective action. • Politicians can decide freely whether they wish market forces to shape their health systems or not. Tutors can use the learning materials at three levels: appreciation; appraisal; and analysis. They need to be sensitive to their audiences’ skills, background and experience and to their prospective needs in choosing what level(s) to address and how to do it. Appreciation aims to help users gain a fuller understanding of where particular concepts, approaches or tools might be used in health policy or practice. Appraisal is concerned to assist users to assess critically particular studies or uses, including potential uses, of health economics in their work or the related work of others. Analysis is a more ambitious aim, to assist users to apply the techniques or tools. The learning modules are, in general, not intended to result in users being able to undertake competent 4 economic analyses of health care policies or practice themselves. However, some of the modules, such as that on economic evaluation and that on citizens’ participation, patients’ rights and ethical frameworks, are closer to analysis than others. Increasing users’ skills in analysis, even fairly rudimentary analysis, can hone their appreciation and appraisal capacities and thus enable them to apply the economic way of thinking more appropriately and more consistently. Finally, finding and preparing tutors and learning from their experience in using the learning materials, are further tasks for the future. First, it is desirable that tutors are matched with the particular learning backgrounds, skills and expectations of the learners. For example, it would not generally be Learning to live with Health Economics I - 11 appropriate for a recently appointed junior academic to use the learning materials with ministers or very senior bureaucrats. The needs of learners will differ widely, as will their capacity to benefit from particular aspects of the learning materials. Consequently, tutors will need to be drawn from a range of backgrounds, not just academics. Also, given the broad range of materials covered in the modules and their relevance for a wide range of audiences, not all

the tutors will necessarily be economists. Secondly, there is a danger that the very areas where the learners' needs are greatest may correlate closely with the areas where competent tutors are hardest to find and retain. This could apply among the different learning module areas and in relation to different geographical regions. Thirdly, it would be valuable if the experience of the tutors (as well as those of the participants) could be collated on a consistent basis and retained for subsequent evaluation by WHO. This would also make it easier to advise tutors about how best to undertake their important task. I - 12 Learning to live with Health Economics Learning to live with Health Economics I - 13 1.5 Further steps A full set of learning materials is now available. The copyright rests with WHO. The Organization wishes the material to be used as widely as possible, but asks two things. First, it expects users to acknowledge that the originator of the learning materials was the Secretariat of the WHO European Region and to acknowledge the authors of the specific modules they use. Secondly, it asks that users provide feedback to the WHO contact officer (address below) who can supply a pro forma to guide responses on: • who participated in the mission where the learning materials were used; • how the material was used, and which module, when (as will frequently be the case) only a selection of the full set was used; • what worked well and what worked badly; • what has been (or should be) added or deleted; and • any other suggestions. The contact officer is situated in the WHO Regional Office (Scherfigsvej 8, DK-2100 Copenhagen Ø, Denmark, e-mail: postmaster@who.dk). It is the responsibility of this person: • to encourage the widest possible use of the set of learning materials: to the extent that these are available through centres such as universities or other research and training institutions, the WHO contact officer would monitor where the materials were being offered, identify areas of need which were being inadequately met, and seek to facilitate greater use of the learning materials there; • to ensure that those who seek to use the learning materials have a central point of contact so that they can know what is available elsewhere; liaise about other users and possible tutors, and collect and disseminate information on different groups' experience in using the materials; • to collect the evaluation material from tutors and users, so that the evaluation task should not be too onerous for them. WHO encourages the development of as many case studies as possible, especially those that illustrate matters important to users and illustrate significant aspects of the set materials in the context of individual countries or groups of countries. This is especially desirable for those countries that are making use of the materials, or that could be encouraged to do so if relevant case studies (or other local materials) were more readily available. Tutors and users who possess such case studies, or who develop them, are asked to contribute them to the WHO contact officer and authorize their widespread distribution. If other relevant modules are found and the authors are willing to have them included, it I - 14 Learning to live with Health Economics would be appreciated if these too could be similarly sent to the WHO contact officer for distribution. The WHO contact officer is responsible for quality control of the case studies, extra modules and other material and authorizing any distribution of them as part of the expanded set of learning materials. It is the responsibility of the nominated WHO contact officer to review the use of the learning materials two or three years after these have been put onto the worldwide web, in the light of reactions over the period from tutors, users and others, and to see whether the materials: • are serving useful purposes; • should be updated and developed (and if so, how?); • should be revised so that an updated version could be put onto the worldwide web; and · should also be published as a book. Finally, it is a pleasure to acknowledge the valuable contribution to the development and finalization of the learning materials which has been made by the members of the Core Executive Group. In addition to the editors this included David Gunnarsson, Secretary-General of the Ministry of

Health and Social Security in Iceland, and Professor Yannis Yfantopoulos, National and Compodistrian University of Athens in Greece. The draft modules have been tried out by authors in their own teaching settings. They have also been applied in Kazakhstan (by Maksut Kulzhanov and Naila Zhuzzhanova) and Romania (by Victor Olsavszky), and have benefited from feedback on policy relevance from David Gunnarsson, Mihalyi Kökenyi (Hungary) and Yannis Yfantopoulos. Contributions were also made by some young scientists spending short periods at the WHO Regional Office for Europe (Antoine Danzon, Susanne GrosseTebbe, Claire Gudex, Rikke Olesen, Anna Skygge). Joy Bartrup, Janet Leifelt, Connie Petersen and Karen Taksøe-Vester arranged review meetings in Denmark, Greece, Romania and Sweden, chased up contributions and arranged the documentation. The WHO advisers Josep Figueras, Kees de Joncheere, Jibek Karagulova, Suszy Lessof and Nata Menabde peer-reviewed the technical content of the draft book, making valuable suggestions for publication. Rosemary Bohr edited the book on behalf of WHO and the layout was by Shirley and Johannes Frederiksen. Herbert Zöllner Greg Stoddart Chris Selby Smith Chapter II Economics of health Learning to live with Health Economics Edited by H. Zöllner, G. Stoddart and C. Selby Smith WHO Regional Office for Europe Copenhagen, 2003 Key Words HEALTH ECONOMICS DELIVERY OF HEALTH CARE – economics HEALTH POLICY – economics SOCIOECONOMIC FACTORS HEALTH SERVICES ACCESSIBILITY HEALTH CARE REFORM COST–BENEFIT ANALYSIS – methods OUTCOME ASSESSMENT (HEALTH CARE) PROGRAM EVALUATION – methods FORECASTING TEACHING MATERIALS

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Economics of health systems development Chapter IV. Economics of management and the change process Chapter V. Useful economic tools . Learning to live with Health Economics II- 1 2.1 Introduction Chapter 2 is concerned with the economics of health, including how health is "produced" and how it relates to the broader economy and society. Section 2.2 is concerned with the determinants of health; Section 2.3 with differing viewpoints (illustrated by those of health ministries compared to economic ministries) and the allocation and reallocation of resources for health; and Section 2.4 with how the economic and social determinants of health interact with individual behaviour and public policy. Section 2.2 consists of three modules, the first two by Professor Greg Stoddart of McMaster University in Canada and the third by Keith Barnard and Herbert Zöllner. Module 2.2.1 is concerned with the interrelationships between health, health care and the economy. It emphasizes that health systems and economic systems are not independent: they are interrelated in several significant ways, which are explored in the module. Health care is often an important influence on health, but it is only one of a broad array of determinants of health. Healthier populations tend to be more productive populations; conversely, richer societies tend to devote more of their resources to health care. The environments in which people live, work and play, including social, economic, cultural and physical environments, interact with more individual factors (such as genetic endowments) to influence how healthy people are and who gets ill. The interactions can be direct, as when rising living standards lead to improved diets. They can also be indirect, as when economic conditions influence the nature and quality of daily environments, for whole societies or for particular groups such as the unemployed, homeless or poor elderly people. Many of the interactions identified in the module are dynamic rather than static, and the factors can reinforce each other (either for good or ill). Module 2.2.2 emphasizes that all activities and policies that have health consequences are the legitimate subject of health policy. Thus, health is everybody's concern. The module is intended particularly to increase the awareness of those outside the health sector about the potentially pervasive effects of both public and private policies and actions on health outcomes. The corollary is that a broader view is required than is sometimes taken of what constitutes health policy and practice: this is relevant for both public and private decision-makers and leaders. It is also desirable that this broader view of health policy be communicated to the general public. More specifically, the module emphasizes that: health policy encompasses much more than solely health care policy; there are many activities and policies outside the health sector as commonly understood that nevertheless have very important health consequences; and these activities and policies can legitimately be viewed as the subject of health policy (indeed they should be so viewed if health outcomes for the overall population and for specific groups are to be maximized). The module reinforces the need for intersectoral collaboration and action to improve health. II - 2 Learning to live with Health Economics Module 2.2.3 takes a rather different approach. The clarity of the first two modules could perhaps lead an inexperienced reader to conclude that the world is a simple place where simple solutions apply. Of course, this is not so, although analytical constructs can often assist decision-makers and other stakeholders to improve their understanding of aspects of complex situations and identify relevant aspects for alternative courses of future action. The third module explores this complexity with particular emphasis on possible futures, how their essential features can be provided in a helpful form and what implications they may have for developments in health policy and practice. The two modules in Section 2.3 were written by Professor Greg Stoddart from McMaster University in Canada. Module 2.3.1 argues that officials in ministries of health and other agencies, including particularly economic ministries, need to improve their understanding of the

complementary nature of health development and economic development. Of course, they may have very different perspectives on specific issues. Since many of the determinants of health lie outside the scope of health ministries (e.g. level of income, working conditions and social infrastructure), coordination and cooperation with other ministries, particularly economic ministries, are critical to improving health policy, practice and outcomes. The module also argues that, since health care has special characteristics, the health care industry cannot be analysed adequately by a thoughtless application of the standard economic approaches applied in other sectors and for other industries. The module seeks to foster increased understanding and appreciation between health and economic ministries of the viewpoints, constraints and objectives of the other. Ultimately, both health and economic ministries (and other agencies) share an overarching goal of contributing to improvements in the general wellbeing of their countries' populations. Improving health or health care (or improvements in other specific functional areas) are important routes for doing this, but they are not the only routes. Module 2.3.2 provides a conceptual framework for considering the allocation and reallocation of resources for health. Resources are constantly being allocated and reallocated among alternative uses to achieve improved health outcomes. (The issues could also be considered in the context of declining rather than expanding resources.) Intersectoral collaboration for health improvements will frequently require reallocation of resources, including from one sector to another. The module categorizes reallocations of resources into five main types: 1. among health care activities 2. among non-health care activities within the health system 3. between health care and non-health care activities within the health system 4. between the health system and other systems, and 5. among other systems (e.g. from tourism or agriculture to education or transportation). Three other important aspects of this module are noted. First, another important dimension of the conceptual framework concerns the type of resources to be reallocated. Although financial flows (budgets) are usually the focus of initial attention, it is important to remember that the resources themselves are the "real" things that go into health-influencing activities, e.g. individuals' time, skills, experience and reputation, equipment, supplies and the space provided by buildings. Secondly, decisions to reallocate resources for health improvement can be made at different decision-making levels, and in both the public and private sectors. Thirdly, the framework presented in the module has several possible applications, one of which is illustrated in a case study attached to the module. Section 2.4 also contains two modules. These are concerned with how the economic and social determinants of health interact with individual behaviour and public policy, and are rather different although complementary. Module 2.4.1 was prepared by Professor Béatrice Majnoni d'Intignano from the University of Paris and contains a number of challenging features. First she asks: "On what does the health of a nation, of a group, of an individual depend?" She explores the concept of health capital in terms of both individual and collective aspects, and identifies five critical factors: genetic endowment, life risks, the environment to which the individual is exposed, the behaviour of the individual and the social group in which he or she participates, and the health care system, including prevention and health promotion. She provides an illustrative application of these factors to the health trajectory over a lifetime for a man and a woman. Secondly, Professor Majnoni d'Intignano identifies certain industrially induced epidemics which play a key role in health status and health capital in modern societies, either developed or not. She argues that these epidemics are the consequences of the marketing activities and strategies of certain industries in terms of the morbidity, mortality and disability of the targeted groups. Thirdly, she identifies two broad groups among the populations of liberal capitalist economies. There is an apparent health divide between the two groups, which differ in their level of education; and there are

elements of the strong social class gradient which are related to educational qualifications. The valuation of their own health, willingness to take risks and attitudes towards professional health services are very different between the two groups, with consequences for their health behaviour, including their use of health care. The module concludes that the divergence between the two groups seems to be universal, differences between them appear to be increasing, and existing inequalities are likely to increase further in the future. The final module in Chapter 2 (Module 2.4.2), by Professor Björn Lindgren from the University of Lund, Sweden, is concerned with individual behaviour, health capital and public policy. The module argues that, although health is determined by many factors that are beyond the control of the individual (such as heredity, environmental factors and chance), people can still influence their health to a considerable degree. Thus, individual behaviour is one of the determinants of the incidence and prevalence of disease and the costs of ill health. Secondly, the module notes that the health status of an individual over his or her lifetime is significantly influenced by the fact that most individuals lead their lives in families. For example, family members typically care for the health and welfare of other family members. They may provide time and income to invest in health, so that the time and money budget constraints are extended for the individual who lives in a family compared to the individual who is living alone. The relationships between health outcomes for an individual and his or her family circumstances can differ systematically, for example by gender or age. There are interesting questions about the extent to which the factors are interrelated, cumulative and under the control of the individual. Also, what are the relative roles for the individual, other family members, the health care system and wider society? Thirdly, the module argues that public policy measures, assisted by economic analysis of individual health behaviour and the differences in health among people, can contribute to improved public health, either directly through improvements to the environment, or indirectly through changes in the regulation and incentive structures that influence individual health behaviour. Finally, the module emphasizes that the extent to which a society relies on individual or collective approaches to the “production” of health and the emphasis it puts on individual health (the “distribution” of health) depends on historical circumstances and values, economic and social development, and the distribution of income, wealth and other life chances. II - 4 Learning to live with Health Economics Learning to live with Health Economics II- 5 2.2 Health and health action 2.2.1 The interrelationship of health, health care and the economy Greg Stoddart1 Key messages • Health systems and economic systems are not independent. They are interrelated in several important ways. • Although health care can be an important influence on health, it is only one of a broad array of determinants of health. • The interaction between the environments (social, economic, cultural and physical) in which people live, work and play and individual factors (such as genetics) have a marked influence on who will suffer ill health. Economic conditions heavily influence the nature and quality of daily environments. • Healthier populations are more productive populations. Tutors’ notes This module is intended primarily for the appreciation level of skill development. Its goal is to provide a framework to broaden the perspective from which participants view both the health and economic systems. It can be used with several different groups: • health care providers – doctors, nurses, etc. • health service managers and administrators • civil servants with responsibilities in health or social care ministries • civil servants with responsibilities in economic ministries • business and labour leaders from the general economy • elected politicians. 1 This module was prepared by Professor Greg Stoddart, Centre for Health Economics and Policy Analysis, McMaster University, Canada (e-mail: stoddart@mcmaster.ca). II - 6 Learning to live with Health Economics An effective way to use the module

would be to convene a workshop with participants from all of the above groups and ask them to undertake the exercises together. Much of the value in this module comes from the realization that social (including health) and economic policies are not separable. Each affects the other. This recognition will be enhanced by first-hand accounts of the importance of the economic sectors for health, and vice versa, delivered by people in those sectors. In drawing out examples for use with this module, tutors may wish to pay attention to the dynamic nature of economic performance. The effects of contractions as well as expansions in the economy can be traced around the triangle in Fig. 1. Tutors might wish to consider case studies of central and eastern European economies in this regard. Health Health care Economy Society Fig. 1. The macro triangle It is suggested that tutors spend a few moments at the beginning clarifying the concepts in Fig. 1. Different definitions of “health” can be advanced. The range of activities included in “health care” can be identified. The various dimensions of “economic performance” should be specified (e.g. growth or contraction, inflation/deflation, employment/unemployment, productivity, income distribution, etc.). In using Exercise 2 with a mixed group as suggested above, an interesting way to proceed would be to ask the participants to suggest policy changes in sectors other than their own, i.e. health sector participants to suggest policy changes in economic sectors, and vice versa. Introduction Health systems and economic systems are perhaps the two most complex systems in all countries. Too frequently they are seen as independent systems. In fact, they are closely related in numerous direct and indirect ways. The health of a country’s population is influenced dramatically by the level and Learning to live with Health Economics II- 7 type of economic activity and economic policies. Health is also influenced, of course, by the availability of effective health care services, which require a commitment of national resources, both public and private. But health care is only one of the broad arrays of determinants of health, and spending on health care is only one type of investment for health. Conversely, the health of a nation – defined broadly as its physical, mental and social functioning and ability to cope with life’s daily challenges – is one important determinant of national economic performance. Unhealthy societies do not prosper economically and often fail to achieve their economic potential, with adverse consequences for their citizens, including both present and future generations. The interrelationship of health, health care and the economy is a major theme of WHO’s health for all strategy (1,2). This module supports the initiative by encouraging participants to explore possible direct and indirect relationships between health, health care and economic performance in their own countries. It begins with an exercise for participants, then provides some generic examples of the types of linkage between the three dimensions that participants might wish to consider. The examples are not intended to be exhaustive; participants are expected to add to and modify them. The module concludes with a second exercise in which participants are asked, in view of their increased awareness of the interrelationships, to select two policy changes in their own country which might simultaneously improve health and economic performance or at least improve one without adverse effects on the other. Exercise 1 Identify as many distinct, and potentially causal, relationships as you can between health, health care and economic performance. Use the following questions as a guide for systematic discussion. Questions 1. In what specific ways can a nation’s health influence the performance of its economy, including (i) the performance of private sector enterprises; (ii) overall economic performance as measured by common economic indicators such as GDP growth, unemployment, inflation or income distribution; and (iii) the level of public expenditure required for social programmes, including health care? economic indicators such as GDP growth, unemployment, inflation or income distribution; and (iii) the level of public expenditure on social programmes including health care? 2. In what specific ways can the provision of effective

health care services improve the functioning of an economy and the health of a population? In what specific ways might the level and types of expenditure on health care services affect the economy? 3. In what specific ways can the health of citizens and the need for health care be affected by the functioning of an economy, including (i) the performance of private sector enterprises; (ii) overall economic performance as measured by common economic indicators such as GDP growth, unemployment, inflation or income distribution; and (iii) the level of public expenditure on social programmes including health care? There are three other points in relation to Exercise 1. First, participants should feel free to add other economic indicators that they feel are important. Secondly, participants are requested to illustrate their answers to the above questions with examples, observations and statistics from their own countries. Thirdly, a conceptual framework is provided for this discussion in Fig. 1. This illustrates six distinct types of direct influence which may be explored. By following the arrows around the triangle it is also II - 8 Learning to live with Health Economics possible to trace indirect influences and feedback loops between the three boxes labelled Health, Health Care, and Economic Performance. The following sub-sections provide brief illustrations of the six types of linkage in Fig. 1. The influence of health care on health This is the most straightforward of the six pathways. The provision of effective health care services in a timely manner can be expected to improve the health of individuals and populations. Attention must be paid, of course, to evidence-based decision-making in the delivery of services of proven efficacy and effectiveness, and emphasis must also be placed on cost–effectiveness, i.e. providing needed, effective services in the least costly way. It is important to note that the balance and structure of health care systems can have a significant influence on the health gains achieved. For example, systems that emphasize comprehensive primary care rather than highly specialized secondary and tertiary care may have a greater impact on population health. Similarly, the choice of financing method for health care systems can have a significant effect on the health of subgroups in the population, as well as on the overall cost of health care. For example, systems that rely on extensive private financing through out-of-pocket user charges or private insurance may restrict access to care and decrease health gains for lower-income groups, as well as increase health care expenditure relative to publicly financed systems. The influence of health on health care The arrows A and B in Fig. 1 may be seen as one subsystem or feedback loop. To the extent that a population's health improves and all other factors remain constant, the need for health care in future should in theory decrease. This is one argument in favour of the emphasis on preventive services, especially those for maternal and child health. In practice, it is seldom possible to make an analysis holding all other factors constant. Moreover, as the average level of health improves for a population, needs are redefined and new needs become apparent or rise to a higher priority. For example, if appropriate primary care services are established, or if life expectancy increases, the need for highly specialized acute, chronic or rehabilitative services will almost certainly be accentuated. This is in part due to the nature of health itself and the fact that there is always room for improvement (especially when social and emotional function as well as physical function are considered), and in part due to the dynamics of health care as an industry in which the momentum of providers as economic agents constantly pushes for more services – of all types – to be delivered. The influence of health on economic performance Healthier populations are more productive populations in general. Note that this is not a prescription to focus only on the health of those capable of contributing to an economy; social justice is an important policy objective for health in most jurisdictions, requiring that a much broader view be taken. But to the extent that the working-age groups in a population are healthier (e.g. longer life expectancy, lower morbidity,

increased ability to cope with daily life and greater resiliency), both the overall output and the quality of output in an economy might be expected to rise. Lower absenteeism in the workforce would be one specific example of this. Good health may also have a feedback effect for individuals and families through higher incomes, which in turn permit higher standards of living and healthier lifestyles. Note also, however, that improvements in health that involve longer life expectancy as well Learning to live with Health Economics II- 9 as, or instead of, improved quality of life will affect the sociodemographic profile of populations in ways that will have implications for public expenditure, on pensions for example. The influence of economic performance on health Both for individuals and societies, prosperity is consistently associated with better health through both material and psychosocial pathways, some of which are only recently beginning to be understood. Indeed, the socioeconomic gradient in health – i.e. the observation that groups at each successively higher step in the social and economic ranking of a population are healthier than those immediately below them – is one of the most important and complex research findings concerning the determinants of health. Part of the story is that well performing economies provide incomes to participants that allow higher material standards of living. Another part apparently involves complex psychosocial pathways between improved daily environments at home and work and decreased levels of stress (or increased resources and supports to cope with stress), which in turn affect health. Unemployment provides a vivid example: involuntarily unemployed individuals report more health problems, may be more prone to suicide and violence, and may engage in more health-detrimental lifestyles (e.g. consumption of tobacco and alcohol) than those in work. (This also feeds back through arrow B in Fig. 1 to increased health care expenditure.) Conditions of employment provide another example. How employers structure the workplace, for example to ensure the safety of their employees, or to allow workers flexibility to organize child care or care for older people, can be an important determinant of health. Yet another part of the story is that, aside from individual interactions in the workplace, prosperous economies afford their governments the capacity to improve supportive national programmes in health-determining areas such as education, income support or early childhood development. Increased output and employment, prosperity, and increased income and wealth do not themselves guarantee health gains, however. For example, industrial production may contaminate the physical and natural environment if it is not monitored and regulated. Or increases in production and consumption may be associated with products that have potentially negative consequences for health, such as tobacco products or less nutritious foods. Furthermore, it is very important for health how the gains from economic growth are distributed. An economy which in the course

of its “success” widens the income disparity between rich and poor, or polarizes or marginalizes subgroups, or destabilizes families and other social support networks can be expected to experience health losses instead of gains for significant segments of its population. These effects, and health losses, may be even more serious during periods of economic contraction rather than growth; and thus in certain countries or regions, and over certain time periods, rather than others. The influence of economic performance on health care In addition to those influences on the need for health care which may come about indirectly through the influence of economic performance on health (either positive or negative), as discussed above, other specific examples can be noted. Foremost is the observation that a prosperous economy provides the capacity to sustain the delivery of comprehensive and high quality health services to its population. This is especially so in systems which are predominantly publicly financed through taxes and social insurance contributions, but may also be the case in systems that rely on private insurance or direct payments by individuals. Another example is the interrelationship of prices and wages in the health care sector and the general

economy. For example, it may be difficult to achieve control of health care expenditure if the overall economy is subject to high rates of inflation. General inflation may drive up II - 10 Learning to live with Health Economics the cost of supplies and equipment and may raise the income demands of health care workers. The process could also operate in reverse: inflation in the health care sector could influence trends in the general economy. A third example might be the spillover effects on health care utilization and expenditure of an expansion in a country's domestic medical goods industry. Growth in a country's domestic pharmaceutical industry, for example, may put pressure on its health care system to make increased use of pharmaceutical products. The influence of health care on economic performance An important indirect influence of health care on economic performance is felt through its impact on health described above (arrows A and C). The commitment of resources to health care may also have direct effects on the economy which depend on the alternative uses to which those resources would have been put. Higher spending on health care may mean lower spending on economic infrastructure such as roads or hydroelectric systems, or on other health-enhancing social programmes such as pensions, education or pollution control. The way in which health care systems are organized and financed may also have important consequences. High tax rates or insurance premiums, for example, may lower the disposable income of the working population and affect both savings and consumption. The type of financing mechanism a country uses may also affect the operating costs of its commercial firms, making them more or less competitive internationally. This is the case even within systems which are almost entirely publicly financed but which rely more or less heavily on payroll taxes, for example. The health care system is also itself an industry and therefore a source of employment and incomes. Although this is of considerable importance to the individuals employed in it, and also to the local economies of communities (especially small communities), it is important not to overemphasize the employment creation influence of health care. The value of health care systems comes from what they produce – the maintenance or restoration of health – rather than from what they consume – resources, including the time and skills of talented individuals – that could have been used for other valued outputs in the economy. This is not to deny, of course, that health care systems can also contribute to other socially valuable outcomes, not just health. Exercise 2 1. In view of the interrelationships among health, health care and economic performance shown in Fig. 1 and illustrated above, suggest two policy changes in either the health system or the general economic system of your own country which might simultaneously improve both the health of the population and the performance of the economy (or would at least improve one of the two, while not weakening the other one). Trace the effects of your suggested policy change around the arrows of the triangle shown in Fig. 1. 2. Why might these policy changes be difficult to implement? Discuss the potential barriers to policy implementation in your country. What can be done to make implementation more likely? References 1. HEALTH21: an introduction to the health for all policy framework for the WHO European Region. Copenhagen, WHO Regional Office for Europe, 1998 (European Health for All Series, No. 5). 2. HEALTH21: the health for all policy framework for the WHO European Region. Copenhagen, WHO Regional Office for Europe, 1999 (European Health for All Series, No. 6). Learning to live with Health Economics II- 11 Further reading AMERICAN ACADEMY OF ARTS AND SCIENCES. Health and wealth. Daedalus, 123(4): (Fall 1994). AMICK, B.C. ET AL. Society and health. New York, Oxford University Press, 1995. BUNKER, J.P. ET AL. Improving health: measuring effects of medical care. Milbank quarterly, 72(2): 225–258 (1994). EVANS, R.G. ET AL. Why are some people healthy and others not? The determinants of health of populations. New York, Aldine de Gruyter, 1994. HERTZMAN, C. ET AL. East-

west life expectancy gap in Europe: environmental and non-environmental determinants. Amsterdam, Kluwer Academic Publishers, 1996. Investment for health: creating healthy public policies. Copenhagen, WHO Regional Office for Europe, 1998. PAULY, M.V. When does curbing health costs help the economy? Health affairs, 14(2): 68–82 (1995). SAGAN, L.A. The health of nations. New York, Basic Books, 1987. STODDART, G.L. Le défi de la santé dans les économies modernes. In: Jacobzone, S., ed. Économie de la santé: trajectoires du futur. Paris, Institut National de la Statistique et des Études Économiques, 1997, pp. 43–67 (INSEE Méthodes No. 64–65). 2.2.2 Health is everybody's concern – a different view of health policy Greg Stoddart2 Key messages • Health policy encompasses much more than just health care policy. • There are many activities and policies outside the health sector that nevertheless have very important health consequences. • These activities and policies can legitimately be viewed as the subject of health policy. This view reinforces the need for intersectoral collaboration and action to improve health. Tutors' notes This module is intended as a "springboard" for tutors to take one main idea – that all activities and policies that have health consequences are the legitimate subject of health policy – and illustrate the far-reaching significance of the idea from their own experience or that of their students. The module is primarily intended for participants from outside the health sector, such as: • elected officials and bureaucratic staff from national ministries other than health • executives of national and international corporations • representatives of unions and other workers' associations 2 This module was prepared by Professor Greg Stoddart, Centre for Health Economics and Policy Analysis, McMaster University, Canada (e-mail: stoddart@mcmaster.ca). II - 12 Learning to live with Health Economics • officials in nongovernmental organizations outside the health sector, and • the general public. Although the general public is often a difficult audience to reach, it is worth keeping in mind that politicians and others can use and illustrate this idea in public speeches, discussions and other forums. The basic idea in the module provides a different appreciation for actions and policies, where their health effects might otherwise be ignored. However, the topics which the module can lead into offer ample scope for both appraisal and analysis skills to be developed. For example, the subject of intersectoral action and healthy public policy, which is highlighted in the list of further reading at the end of this module, could generate a discussion of the skills that participants need to acquire. Another example highlighted in the list of further reading is health inequalities. This is a large subject in itself, which includes the idea of socioeconomic gradients in health status within populations, a concept that is central to the analysis of health determinants. Tutors may wish to use this "springboard" in different ways. Some that were suggested during the development of the module were: • to focus on
4 the different settings (e.g. family, workplace, school, community, country) in which social policies affect health; • to highlight dynamic aspects of Fig. 1, beginning with examples of interactions between ministries; and • to start from an examination of differences between the life expectancies of populations in two or more countries, and try to link them to different policies relating to health, both public and private. Policies, programmes, activities with health as their objective Policies, programmes, activities with health as their consequence Health Health Other goals Fig. 1. A different view of health policy Learning to live with Health Economics II- 13 Introduction This brief module is intended to increase the awareness of those outside the health sector regarding the pervasive health effects of both public and private policies and actions. A corollary is that a broader view of what constitutes health policy may be required of public and private decision-makers and leaders, including elected politicians, bureaucrats, executives of national and international corporations, representatives of unions and other workers' associations, and officials of nongovernmental organizations. Although it is a difficult task, it is also desirable to communicate this broader view

of health policy to the general public. Discussion It is perhaps not surprising that most people, on hearing the phrase “health policy”, think of hospitals, doctors, nurses and the like. The health care system is a critical component of health policy, and in most countries it receives the largest share of resources directed to health as well as the largest share of media coverage about health issues. But health policy is much more than health care policy. One way to see this is to envision all of the activities (actions, programmes or policies) that have health as their primary objective, or at least as one major objective. These go well beyond the activities of health care professionals and the walls of hospitals or clinics. For example, income support may be provided to low-income pregnant women to enable them to feed themselves better and make eating choices that are healthier for their babies. Programmes in which specially trained community volunteers operate telephone helplines for troubled adolescents aim to reduce the number of young people committing suicide. Meal delivery programmes and services that adapt dwellings for the special needs of the elderly contribute not only to their independence but to their health and safety as well. It is important, therefore, to include in health policy all activities that have health as one of their objectives. Does this go far enough? Many observers would say that it does not. The reason is that there are many activities outside the health sector which, although they do not have health objectives, have very important health consequences. Consider the following list, for example. • Because there are seldom economic incentives (public subsidies or tax concessions) for the recycling and reuse of solid waste, firms do not find it as profitable as they might to engage in it. Consequently, adverse health effects result from contaminated soil and water. • Short-term contracts and temporary jobs instead of permanent employment help companies compete, but job insecurity is associated with serious emotional, social and physical health outcomes. • A country’s agricultural policies may encourage overuse of fertilizers or the production of highfat milk, both of which can have health consequences. • Public policies on taxes and income security may widen the income disparity between rich and poor, or steepen the income gradient in a society. Apart from the concerns this may raise about equity, international experience suggests that greater inequality of income is associated with poorer levels of overall population health. • Inadequate preschool facilities and programmes for children are not just a barrier to parents participating in the labour market. They can also affect the health, development and life chances of the children. II - 14 Learning to live with Health Economics Almost everywhere one looks – in different settings, in different sectors and at different stages of life – commonplace activities, actions, policies and programmes affect the health of individuals, groups and nations. These varied activities, actions, policies and programmes may not have health objectives, but they do have serious health consequences. And they may therefore legitimately be viewed as the subject of health policy. It follows that health policy-making must involve parties outside the health sector. In other words, health is everybody’s business. This extended view of health policy is illustrated in Fig. 1, where the activities in the top box on the right have consequences that go well beyond the intended goals of the activities and affect health. They may do so to a greater or lesser degree, positively or negatively. Nevertheless, they are all relevant for health policy-making, health practice and potential health action. Exercise 1 1. Identify the most important programme or policy decision with which you have been involved in the past year. Did it have health as an objective? If the answer is yes, explain the specific health target to be achieved. If the answer is no, consider whether this decision might have health consequences for any individuals or groups. 2. Using today’s local newspaper, select several major stories in the news concerning the policies or decisions of governments or private companies. Analyse the potential effects on health of these decisions or policies. As an aid for this exercise, you may wish to

look at Fig. 2. The rows of the chart ask the question, “Does this policy or action have health as an objective?” The columns of the chart ask, “Does this policy or action have health as a consequence?” The consequences could be positive or negative. Does this policy or action have … Health as a (positive or negative)? consequence Health as an objective Yes Yes No No C D A B Fig. 2. The health objectives–consequences matrix Medical and hospital services would be in box A, as would other health care services such as pharmaceuticals, rehabilitation and public health. So too would be the examples considered earlier of income support to low-income pregnant women, telephone helplines for troubled adolescents, and services to preserve elderly people’s independence. Note that the effectiveness of health care and other health-promoting activities must always be demonstrated and requires constant monitoring and evaluation. Learning to live with Health Economics II- 15 Box B, unfortunately, is all too often not as empty as one would hope or expect. When scarce resources are devoted to policies or practices that have health as an objective (especially when it is the objective) but there are no favourable consequences, remedial action is required and reallocation of resources may be appropriate. (Resource reallocation is considered in more detail in Module 2.3.2 below.) The other examples given above, beginning with the example of economic incentives for recycling and reuse of solid waste, would be in box C, as might many of the examples that participants identify in this exercise. It is difficult, in fact, to think of policies or actions in box D. This illustrates how pervasively health is interwoven with activities in all sectors. Further reading AMICK, B.C. ET AL. Society and health. New York, Oxford University Press, 1995. BENEZEVAL, M. ET AL. Tackling inequalities in health: an agenda for action. London, King’s Fund 1995. DOOLEY, D. ET AL. Health and unemployment. Annual review of public health, 17: 449–465 (1996). EVANS, R.G. ET AL. Why are some people healthy and others not? The determinants of health of populations. New York, Aldine de Gruyter, 1994. GEPKENS, A. & GUNNING-SCHEPERS, L.J. Interventions to reduce socioeconomic health differences. European journal of public health, 6(3): 218–226 (1996). HEALTH21: an introduction to the health for all policy framework for the WHO European Region. Copenhagen, WHO Regional Office for Europe, 1998 (European Health for All Series, No. 5). HEALTH21: the health for all policy framework for the WHO European Region. Copenhagen, WHO Regional Office for Europe, 1999 (European Health for All Series, No. 6). Intersectoral action for health. Geneva, World Health Organization (Office of Global and Integrated Environmental Health), 1997. MARMOT, M.G. & DAVEY SMITH, G. Why are the Japanese living longer? British medical journal, 299: 1547–1551 (1989). MILIO, N. Making healthy public policy; developing the science by learning the art: an ecological framework for policy studies. Health promotion, 2(3): 263–274 (1988). MILIO, N. Toward healthy longevity: lessons in

food and nutrition policy development from Finland and Norway. Scandinavian journal of social medicine, 19(4): 209–217 (1991). WILKINSON, R.G. Unhealthy societies. London, Routledge, 1996. II - 16 Learning to live with Health Economics 2.2.3 Looking ahead to the future Keith Barnard and Herbert Zöllner3 Key messages • The environment for taking decisions on health has become more complex, uncertain and stressful at all levels. • Futures work (which goes beyond forecasting and prediction) is a useful approach to addressing complex issues and coping with uncertainties in policy-making. • It includes the participative development of alternative scenarios and the scanning of developments for new opportunities and challenges. Tutors’ notes This module is accessible to all audiences and can help to challenge current ways of seeing and doing things. Emphasis is put on the scenario approach, and the tutor may wish to supplement with aspects of: • health policy-making (policy environment, partnerships, management of change) from Module 4.2.2 on the political management of public health; • quantitative modelling (scenario modelling, sensitivity analysis) from Module 5.4.1 on economic modelling and forecasting; • economic choice

(discounting and sensitivity analysis) from Module 5.3.1 on economic evaluation. Role-playing may be involved in tackling the exercises. Uncertainty and the policy environment The policy environment is becoming ever more complex and stressful and is changing rapidly. Important transitions are simultaneously taking place in demography and epidemiology, in the economic, political and international scenes. Challenges range from decentralization to globalization, and time horizons tend to be too short with little room for reflection, critical assessment and longer-term view. Managing change requires new skills and clear vision about what is desirable and feasible. The involvement of and work with key stakeholders are paramount to successful policy development. Skills in consultation, advocacy, negotiation and persuasion as well as dealing with the media are needed. This is particularly so in the relations between the health and other sectors, where each can expect the other to treat its legitimate interests with respect and understanding. Health is heavily influenced by the increasing pace of political, social and technical change. The challenges facing decision-makers in the health sector are to forecast the repercussions on health of such changes, to exert influence over them and to take decisions now to make them as favourable and harmless as possible in the long term. 3 This module was prepared by Keith Barnard of Gothenburg, Sweden (e-mail: barnard@tripnet.se) and Dr Herbert Zöllner, Consultant, Bavarian Public Health Research Center of the Ludwig-Maximilians-University, Munich, Germany (e-mail: ZOL@ibe.med.uni-muenchen.de and h.zollner@gmx.net). Learning to live with Health Economics II-17 Pressures on high-level decision-makers often emerge in public view as crises when the public and parliamentarians are quick to perceive that ministers, civil servants or professional advisers do not appear to be in control. They often appear to have an imperfect understanding of how the issue is seen from other perspectives, and they have difficulty in reassuring a sceptical public that they are taking the right course of action. In many cases, at least three stakeholders play out the principal roles in a crisis: • scientists, whose research findings or interpretation of trend data cast doubt on a particular development, practice or policy proposal; • the media, whose handling of the scientists' message is critical to public understanding of the issue and judgment of the government's subsequent handling of it; • decision-makers, who have to weigh up the scientists' message (now in the public domain), the advice they receive from their own professionals and the likely public response to whatever action they might take. In terms of taking action, since there are often many stakeholders and parallel action by different actors in different organizations (or even sectors) is needed, an old style command and control approach is typically neither feasible nor appropriate. The challenge is to establish whether these situations necessarily need to become crises. If they can be anticipated, appropriate preparations can be made so that when they break into the public domain, they can be handled – and be seen to be handled – constructively and responsibly. The public and particular stakeholders can thus be assured that health and safety are the priority concern of the government or the agency legally responsible. There are two types of area, each requiring courageous responses, choices and decisions now: • areas in which there is political pressure to act right away, but where the long-term consequences are uncertain (i.e. in the case of new diseases); • areas in which changes are occurring (or are about to occur) in the broader environment of health which are likely to influence health significantly in the long term (new ways of obtaining, processing and disseminating information, advances in biotechnology and changing values and expectations). Futures work Sometimes it is easier to foresee developments such as natural and biological phenomena and demographic change. But even in these cases, simple models of prediction and extrapolation may fail, especially when values and behaviour patterns are involved. John Coles, in speaking about foreign policy, says "… policy-making is

hard. It needs intellectual rigour, a capacity for innovation, a grasp of political reality, a sense of the future and, quite often, a certain courage” (1). Advocating planning and futures work, he states that “… the purpose is not to predict confidently what will happen in the world – a task for which there is little science – but by concentrating minds on alternative scenarios and possible developments to make today’s decisions sounder and more likely to stand the test of time.” The purpose of futures work is not to make predictions but to aim at foresight. It is to explore alternative futures so as to support innovative, long-term strategic thinking for pressing issues. Quantitative models are not a substitute but can be useful information components underlying specific aspects of futures work. Futures work should ideally not be ad hoc events but part and parcel of scanning and foresight intelligence systems that are able to feed health policy-makers and actors with information on future challenges to health and access to health (i.e. both opportunities and threats). We can best serve our own interest as a society: • if, when faced with a picture of the future, we keep our minds open (like parachutes they operate best that way) and use them to explore possibilities further, i.e. it becomes an occasion for reflection on the future; • if we can shake policy-makers out of their comfort zone of current assumptions and ways of responding to challenges and pressures; • if we keep our sensors active, scanning for early warning signs and weak signals; and • if we can build broad-based awareness of the significance of acting or not acting on the issues we have judged as demanding attention in our scan of possible futures. The scenario approach The preparation of scenarios is a well tried and proven means of addressing complex issues and coping with the inherent uncertainties in policy-making. The term “scenario” is used in various senses, but these only reflect levels of sophistication and detail, especially in the quantification and analysis of the different factors that are taken into account. The basic idea is that a scenario, as a picture of the future, is a synthesis of evidence, ideas and assumptions the nature of which should be immediately apparent to any reader. Scenarios are not predictions but products of the imagination of what the future might or could be. The crafting of a set of scenarios can provide policy-makers with a sense of the range of possible futures. These scenarios would have different emphases and sets of assumptions. One mode of presentation is to write a scenario as if it were history, by projecting forward in time and developing an imaginative account of how history might unfold from the present. The simplest approach is to present two strongly contrasting scenarios which would serve to focus policy-makers’ attention and to provoke a response in terms of action to be taken either to create what is desired or to prevent what is to be avoided. A picture of a desired future which mobilizes people to work together to bring it about can have great political power. In some organizations and settings this is presented as the “vision”.

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Among policy-makers it is also referred to as the “preferred scenario”. The primary target audience for different types of futures work could be: • the wider community or some groups within it – political activists, top managers and professionals in the health sector, and people in leadership positions in different sectors and civil society generally, who are attracted by an attention-commanding, plausible story or stories of the future; • within government, policy analysts and advisers who would (or should) expect to see the detail set out transparently so that they could recover for themselves the trail from selection of evidence to argument to conclusions (assumptions about the future) to recommendations; and • senior policy-makers who, given their limited attention span and absorption capacity (because of the pressures on them), will want simple, succinct statements with a hard content and with clear relevance to decisions they will have to make in the short term. Scenario-writing is story-telling about possible future situations with a particular purpose: to help policy-makers and other decision-makers to engage with the choices they have to make, and to identify when they will be likely to have to make them and how they can

best effect the changes they Learning to live with Health Economics II- 19 elect to make. These decisions are never simple technical choices. They are made in a political, cultural and social, and economic context, and focus on action which ideally enjoys political support, cultural and social acceptability, and affordability with a defensible use of resources. Scanning the present and the foreseeable future, to support the decision-making process, should therefore have a multiple focus. It must necessarily embrace these key interlocking dimensions of the key actors, context and time dimensions to ensure that the scenarios given to the decision-makers are based on the best possible intelligence. Annex 1 to this module presents two scenarios that differ considerably regarding their opportunity for health gain. Neither scenario is presented as a prediction but they serve to signal different obstacles and facilitating factors. They differ considerably regarding the opportunities for better health and quality of life that they present. What makes the difference? The “pathogenic” scenario signals the consequences of a lack of political will, a disregard of the evidence of the effects of present trends, and drift rather than a purposeful focus in policy-making. The “healthy” scenario takes development seriously. This requires the commitment of the whole government, all sectors and all parts of the community. Developing a foresight capability for policy-making An understanding of the origins, complexity and far-reaching implications of the changes in train in today’s Europe is a prerequisite for building policies that protect and promote health and wellbeing. It is essential that economists, sociologists and other social scientists join with public health experts to pool their perspectives and analyses in ways that will reveal fresh insights and possibilities for intervention. This means that countries need individually and collectively to build up a foresight capacity that would include monitoring and analysing trends and picking up early warning signals relating to public health, i.e. a comprehensive health intelligence-gathering and analysis function, including multiple focus-scanning. This is not a one-off effort. The challenge is to produce not a single forecast but alternative scenarios, to repeat the exercise at intervals in relation to key and emerging issues, and to scan and monitor the broader environment of health for change. In this way, evidence can be built up and tested regarding how far our assumptions are holding up and to assess the possible importance of new factors and phenomena (such as technological developments or changing fashions) or for spotting (as yet) weak signals and early warning signs. A judgement may then be made whether there is a need to develop scenarios of possible new futures. Using research and evidence in looking ahead responds to the demand that policies, service development and professional practice should all be built on the strongest possible knowledge base. In developing a foresight capacity, it is important for evidence to be appropriate. It is particularly important that the evidence resulting from policy sciences and the broad range of social sciences, including that gleaned from appropriate case studies, is not neglected. Further challenges include the development of knowledge in all relevant areas, especially in relation to the demonstration and dissemination of findings as well as education and training. For the economist, such repetitive scenario production is a form of iterative cost–benefit analysis (of options) under conditions of uncertainty. Whether its use is justified in particular cases will depend on whether it improves the quality of the decisions that are eventually made and implemented. Are II - 20 Learning to live with Health Economics they taken more confidently? Are they seen as more equitable and respecting the values of solidarity and mutuality? Are they seen as feasible and capable of being implemented? Are only a few necessary decisions being taken now, leaving others to be made in the future, possibly in conditions of less uncertainty? The quality of a foresight capability can be improved by encouraging an inclusive and participative process and discussion that serves (i) to explore the relevance of scenarios and other futures work to the decision-maker’s operating

environment, and (ii) to elicit the range of perceptions of the costs that would be incurred (and by whom) and of the benefits that might accrue (and for whom) from decisions that would be made under the conditions of different scenarios. Exercise 1 How uncertain is the future for society in general, for particular groups and for the health care sector? Consider this question from the viewpoint of various stakeholders, such as a decision-maker in the health care system, a medical scientist, a social science researcher, a health care practitioner, a patient and a media commentator. To what extent would their perspectives and concerns be similar, and to what extent would they be likely to be different? Why? Exercise 2 Please refer to Annex 1 and its two scenarios for 2030 (Business as usual – muddling on versus Making policy as though development really mattered). What are one or two key actions now or during the next year that could tip the balance either towards the first or the second scenario in your country? What kind of futures work (including scenarios and scanning) could facilitate action? How could this work be organized? Which key stakeholders should be involved? What incentives might they have, or need, to participate? Exercise 3 In what ways does your country, region or institution attempt to foresee the future? Over how long a period of time? How successful have such attempts proved to be? Could they be improved? If so, how? Exercise 4 Choose a report in today's newspaper about a recent significant development, perhaps in health care or the wider health system, perhaps elsewhere. Were the developments expected or a surprise, in whole or in part? What were the antecedents of the current developments? How long ago did these antecedents arise? Looking back, could the current developments have been foreseen, wholly or in part? If they were not foreseen, why was that the case? Looking forward, are there related developments which, although they seem relatively minor now, could be expected to result in major changes in the future? Could feasible adjustments now make a big difference to the course of their developments over the longer term? Learning to live with Health Economics II- 21 Annex 1. Two scenarios Below are two simplified fragments of "history scenarios": alternative futures, in which people will use whatever health potential they have in attempting to lead satisfying lives that reflect the three dimensions of equity, level of living and social cohesion. They are written from the vantage point of 2030, far enough into the future for the effects of trends to have become clear and for the benefits of policy shifts and changes in culture to come through. The contrast between them happens to reflect the tension found in the mass media and in public debate between optimistic and pessimistic views of trends and possibilities. They can be depicted as taking the United Nations system seriously as the voice of the world community versus muddling on in a reactive, passive mode to the trends and pressures. Scenario 1. Business as usual – muddling on In the early years of the twenty-first century, 4 continuing migration, urbanization, chronic unemployment and falling birth rates were eroding family structures and established communities. Meanwhile the informal economy flourished and violence was endemic, despite strong private security and public law enforcement agencies. Politicians were unable or unwilling to envisage any alternative to the existing economic and social order. A continuing lack of confidence in the ability of governments and the responsible international financial institutions to manage economic development ensured that the already existing momentum for globalization, privatization and deregulation not only continued but also accelerated. The basic law of capitalism – the obligation to protect and enhance shareholder value – determined that decisions on productive capacity were governed by opportunities to introduce automation and to relocate where labour costs could be minimized. Virtually all controls on health hazards, whether in the environment or in the sale of goods known to be harmful to health, were relaxed under pressure to remove "unnecessary" production costs or restraint of trade. In health care the profit motive replaced the public service ethic; technological development was skewed in favour of

innovations that offered the most promising returns on investment rather than improving the health of the population. The fleetingly fashionable concept of an enterprise having responsibility for, or accountability to, multiple stakeholders was rejected by governments, industrial pressure groups and think-tanks alike as self-defeating and unworkable. It was deemed to be against individual freedoms. Now, thirty years later, the idea is barely even contemplated and then only by a few communitarian utopians. All the prevailing assumptions about what is best for the economy and society have been shielded from counter-argument by assertions, proclaimed as self-evident, that if the economy were allowed to grow unrestrained by political interference, human ingenuity, individual initiative and spontaneous voluntary action would take care of society's problems. The reality of our modern times is that only a few have prospered, the well connected, the natural entrepreneurs and perhaps also those with skills that for a time were in great demand. There are fewer and fewer people in regular employment and a growing proportion of those are on low wages. The real level of many benefits provided under social security systems has not been maintained against inflation. Changes in eligibility rules over the years have reduced the number of people entitled to benefits. Lack of income constrains people's access to the potential benefits and conveniences II - 22 Learning to live with Health Economics afforded to consumers by technology, and limits their participation in civil society. Increasing numbers of people are unable to meet their basic needs. Rising unemployment, job insecurity, low pay and the deterioration of public as well as traditional family and other informal support systems have led to widening income gaps and to greater social inequality. Increased inequality imposes economic, social and psychological burdens which reduces the wellbeing of everyone, even the employed, and threatens social cohesion and solidarity. Social polarization and the marginalization and social exclusion of particular groups, such as young people who have never experienced steady employment, migrants, and minority ethnic groups, have resulted in increased levels of social conflict. Low levels of remuneration also characterize most parts of the informal economy. While the informal sector may have been beneficial in offering earning opportunities to low-income groups that would not otherwise exist, such people work without the protection of employment legislation or safety standards or any entitlement to social benefits. There are also additional dangers posed by the involvement of organized crime in the informal sector. For some time now there has been deep fear of the growing violence at home and in the streets, resulting from deteriorating social conditions and economic dislocation. There is also organized violence orchestrated by groups motivated by specific political, economic or social objectives, which includes racial or religious aggression and feeds off expectations that cannot be met. Violence disproportionately affects women, children, older people, and various poor and socially marginalized groups, especially migrants who are invariably impoverished, unwelcome and reluctantly supported by the receiving countries and communities. As always in periods of economic difficulty, migrants provoke severe hostile reactions. In political terms the population demands even tighter surveillance and policing measures, paradoxically ensuring that despite the cuts in social expenditure, overall public expenditure remains unexpectedly high. A profile of one family recently appeared in the samizdat newsletter of a proscribed radical reform group trying to mobilize support for a return to active democratic government. Its leaders are committed to re-instituting properly funded and organized public services. This profile, used in an edition brought out to mark World Health Day, was prepared by a journalist writing under the name Eric Blair.4 Scenario 2. Making policy as though development really mattered We have seen a remarkable change over the past thirty years both internationally and in the societies of Member States. Closer cooperation between countries, within the United Nations

system and within regional integrational institutions such as the Council of Europe and the European Union, has proved to be an effective strategy against any danger of international conflict. The international community has begun to move beyond its first concern with security to the United Nations' other concern, human development; it has been responding to the fundamental ethic of equity at the heart of the United Nations Charter. 4 Eric Blair was the pseudonym of a rising star in the BBC World Service, George Orwell, willing to put at risk his career in the mainstream media. Learning to live with Health Economics II- 23 Box 1. Survivors' Tales – Dateline Metropolis, 7 April 2030 Anna and her family now live in a shanty town just outside one of the protected enclaves of our capital city. They have been successful in avoiding the violence and involvement in any of the shanty town gangs, but they're not sure how long it will be before they have to move on. They recently lost their small flat in the enclave itself, that neighbourhood referred to with affection by some of its residents as Wigan Pier. After many months in which they had not found much work, even in the informal economy, they were no longer able to pay the fees to the private security forces. She says they would have had to move out soon anyway, since the utilities had all been cut off and at least outside the enclave they can collect water more easily and forage for things to sell. In the shanty-towns there are still some United Nations aid points dispensing food rations. These rations are no more than basic, but Anna is grateful for what she gets when she can get it. Of course it means queues and coping with the intimidation of the "heavy boys" as she stands in line. They belong to the gangs of jungle capitalists who are attempting to corner the market in food. Fortunately in the past few weeks the gangs have been mainly engaged in fighting among themselves for control of this area. This has meant less harassment of the United Nations aid workers and those in the queue. Anna and her family still consider themselves lucky. There are six adults, in reasonable health, none of them addicted to drugs or alcohol. Out of the ten children born, six survive. They have been discussing whether they should solve their cash problems, at least for a while, by selling a kidney or something else, assuming they could pass the health screening involved. There is a booming market in human organs now that medical science has solved the rejection problem – the "new prostitution" as this trade has been sardonically called, giving a new meaning to the idea of selling your body. How different from Anna's is the life of the affluent few, quartered in luxury homes inside protected compounds seeking perpetual youth and perfect health. On the word of their equally affluent medical advisers, they will quite happily bid for replacement organs at the auctions held in the "transplant bordellos". This is the name cynics give to the tastefully appointed reception areas of the commercial surgical suites where these singular acts of exchange are completed. There are limits to how much of one's body one can sell

4 off in this way. But perhaps more to the point in Anna's mind is that it may be better to act now before the biotechnology corporations develop safe maintenance-free artificial body parts at a price below that which human organs usually fetch at the auctions. Anna has just buried her grandmother, who at fifty-five fell victim to what they assume was tuberculosis. There was no money to get a proper diagnosis, let alone treatment. Two of the younger children are now showing signs of illness. Anna and the other adults will soon have to decide whether they should sell a kidney or find the money some other way to be able to take them to the medical post; if not, they'll trust to luck. Eric Blair Many separate events and issues combined to effect this shift in focus. To cite one case, recognizing the significance of the globalization of the economy, some health policy-makers began to ask the question: can we make the healthy choice the competitive choice and use the market to turn the new global stakeholders into partners in the strategy for health for all? Such questions did not produce instant answers, but in the circumstances they helped to change the terms of debate. The first visible signs were noted in the very early years of the century. The United

Nations system as a whole had been dislocated by the end of the cold war. The learning of new approaches in the new United Nations system was not without difficulty and false starts. But eventually a critical mass of concerned people was formed who were keenly aware that the world was off course politically, II - 24 Learning to live with Health Economics economically and ecologically. This happened in the developed countries in part as a consequence of the flow of information, made possible by global communications. Equally importantly, it resulted from continued pressure from people in developing countries who had understood the issues for a lot longer. In particular, rising ecological awareness and demands for the empowerment of less privileged groups led to the creation of many new interest groups and organizations. Political leaders were paying much more than lip service when they acknowledged the severe challenges to the stability of the international order and the cohesion of societies. They saw the danger posed by gross differences between population groups in disposable incomes, employment opportunities, access to resources, and freedom from the threat of war or social disturbance. There was also a delayed but cheerful realization that the international community had in fact done the necessary preparatory work for attacking these problems in its various summits and conferences in the 1990s and in the detailed preparations of the individual United Nations programmes, funds and specialized agencies, not least WHO and its commitment to the renewal of the strategy for health for all. Then many additional positive signs emerged, linked to changing perspectives on participation and governance and the still largely untapped potential in the use of technology in tackling problems. People began to picture how in the future people might use their health potential to lead satisfying lives in a healthy society that manifested high levels of equity, material and other resources for living, and social stability. Governments taking a fresh look at problems saw that not all changes required massive expenditure. Lack of funds was no longer an automatic justification for taking no action. The intellectual and political paralysis that the preoccupation with funding had induced gave way to much more imaginative and participative responses to hitherto intractable problems. There was a new and beneficent opportunism in public policy, seizing on events and responding to other players, encouraging them to take new initiatives to improve people’s quality of life. Governments came to see that there was no reason for making the false choice between greater equity and economic growth; investment in “social capital” and in reducing inequities increased efficiency. The inequity debate was no longer seen as the politics of envy or the simplistic division of people into self-reliant individuals who were the deserving “haves” and the feckless underclass who were the undeserving “have-nots”. The argument had got through to politicians that the phenomenon of differences in health, living standards and quality of life was better understood as a gradient involving a number of different social groups where (with the exception of the group at the top) each was worse off than the groups above them. Reducing inequities was now almost everybody’s concern. In the reshaping of the governance of social and public institutions, attention was given to fostering the development of “reflexive” social actors who could deal with risk and uncertainty and encourage changes in the behaviour of individuals and institutions so that they became more adaptive and selfmonitoring. The reshaping of governance implied new roles for the partners involved in the political process, including interest groups and nongovernmental organizations as well as individual citizens. There was growing political commitment to tapping the energy and resourcefulness of the entire community, and recognition that this would be facilitated by various developments in communications technology. This was seen as essential in moving towards greater democratic participation both in defining problems and priorities and in implementing solutions. The political rediscovery of poverty in the midst of

affluence fuelled the growing interest in strengthening social and economic structures. The importance of social support, the ability to cope Learning to live with Health Economics II- 25 and maintain dignity and the sense of control over one's life were once more fully recognized. There was a readiness to address issues and to consider the implications for social policy. One example was the realization of how fragile social and family support networks had become in most countries in Europe, and a recognition of the diversity in family and community structures. Policy analysts and political advisers and then politicians themselves came to see that there was a clear relationship between economic performance, income distribution and the health status of a nation; and that inequity in health was strongly associated with social position, occupation, ethnicity, gender and generation. It was then remembered and fully acknowledged that the major improvements in mortality that had occurred in the developed world were strongly linked to social and economic development. The earlier reductions in infectious disease mortality had been brought about by changes in the environment, better nutrition, and better housing and sanitation. Policy analysts and researchers have been looking again at the connections between the physical environment, urbanization and health. In recent years improvements in health have been more rapid in countries with smaller income differentials. It has been observed that greater equity is associated with faster economic growth. In social policy terms, education is now recognized as a key factor in promoting not only greater equity, but also greater personal fulfilment and health for individuals. We can now see clearly that above a certain level of wealth, it is not the richest societies which have the best health but those that have the smallest income difference between rich and poor. Population-wide health improvement is predicated on widely shared economic prosperity, the development of a supportive community life and investment in people. Public policy debate now focuses on the equity implications of different options, e.g. how to ensure that trends in the use of new technology do not selectively benefit only certain groups in society; and how to move towards a more equitable distribution of income and access to all resources that can help protect, promote and restore health.
References 1. COLES, J. Making foreign policy. London, John Murray, 2000. Further reading BARNARD, K., ED. The future of health – health of the future: a dialogue based on the proceedings of the Fourth European Consultation on Future Trends 2001 (Nuffield/WHO publication, under preparation). GARRETT, M.J. & BEZOLD, C., ED. Special issue on health futures and the future of health. Futures, 27: 9–10 (1995). JUNGK, R. & MÜLLERT, N. Futures workshops: how to create desirable futures. London, Institute for Social Inventions, 1989. THE NUFFIELD TRUST FOR RESEARCH AND POLICY HEALTH SERVICE. UK health futures – policy futures for UK health. London, The Nuffield Trust, 2000
4 (www.nuffieldtrust.org.uk). II - 26 Learning to live with Health Economics Learning to live with Health Economics II- 27 2.3.1 The differing viewpoints of health and economic ministries Greg Stoddart7 Key messages • Officials in national ministries of health and other ministries would benefit from understanding better the complementary nature of health development and economic development, even though they may have very different perspectives on specific issues. • Many of the determinants of health (e.g. level of income, working conditions, social infrastructure) lie outside the scope of health ministries. Coordination of policies and cooperation with other ministries, particularly economic ministries, are critical to improving health through investments beyond health care. • Health care has special characteristics which have led the governments of most industrialized countries to remove essential health services from private market allocation, for the most part. Economic tools cannot, therefore, be used uncritically with the health care industry in the way that they are used in other industries and sectors. Tutors' notes This module is intended primarily for groups concerned with legislation, such as elected officials

and/ or bureaucratic staff in health ministries and other ministries, especially finance and other economic ministries. It will work best with a mixed group of participants whose specific examples can help each other to understand the pressures in their own and other ministries. The main purpose is to foster an appreciation by both the health and financial/economic participants of: • the breadth of the resource allocation problem for achieving wellbeing • the interrelated nature of health development and economic development • the specific distinguishing characteristics of the health care sector, and 2.3 Structures, ministries and reallocation 7 This module was prepared by Professor Greg Stoddart, Centre for Health Economics and Policy Analysis, McMaster University, Canada (e-mail: stoddart@mcmaster.ca). II - 28 Learning to live with Health Economics • the effects of the policies of each "side" on the other. The challenge for tutors is to avoid polarization of the two sides and to facilitate discussion based on the premise that they share the common goal of improving wellbeing for the community, of which health is one important dimension. The module may also be used with audiences of nongovernmental health care providers or administrators and representatives of the business sector, if the objective is to increase sensitivity to the issues. Again, the learning objective would primarily be at the appreciation level. The subject of the distinguishing characteristics of health care affords the opportunity to approach some health economics concepts which are useful at the appraisal and analysis levels. Some of the material in the list of further reading at the end of the module might be a bit advanced for audiences with no prior exposure to economics. On the other hand, since concepts like market failure will be familiar to officials from finance and other economic ministries, it may be possible at least to appraise some proposals for health care reform in the light of the distinguishing features of health care that are presented in the module. Introduction It is easy to lose sight of the complex interrelationship of health, health care and economic performance illustrated in Module 2.2.1 within the confines and pressures of any one sector. The complementary nature of health development and economic development is sometimes particularly difficult for national officials in ministries of health and ministries of finance to bear in mind, since each typically face serious problems within their own ministries. The issues raised in this module are relevant to the relationship between health and many other national ministries; the finance ministry is chosen for illustrative purposes. The purpose is to foster an increased understanding and appreciation by both sides of the viewpoint, constraints and objectives of the other, and in the process to recognize some of the special characteristics of the health care sector that differentiate it from other economic sectors. After an initial exercise, the module examines some of the differences which often (although not always) characterize the perspectives of ministries on both sides. Other exercises are then suggested to increase mutual understanding and encourage insights regarding the need for increased cooperation in policy-making between the two sides. One important message of this module is that both need to have a common understanding of key analytic frameworks and concepts to facilitate cooperation. Fig. 1 in Module 2.2.1 is one example of such a framework; Fig. 1 below is another example. Common perspectives and differences Ministries of health and ministries of finance share one common, ultimate and over-arching goal: to improve the general wellbeing of their countries' populations. Improving health is one important route for doing so, although it is not the only route. The provision of health services, in turn, is one important route for improving health, although again it is not the only one. Conceptually, a good place to begin is with an examination of the overall resource allocation problem in any society. This is illustrated in Fig. 2, with special emphasis on the role of health services and other determinants of health. Scarce resources have many competing uses, divided here into three categories: health

services, other determinants of health, and other determinants of wellbeing. Within Learning to live with Health Economics II- 29 Fig. 1. How closely related are ministries of finance and health? each category there are a multitude of competing uses, each important in its own right and each with its associated policies, advocates, critics and beneficiaries. Exercise 1 1. How closely related are the ministry of health and the ministry of finance in your country? Which of the diagrams in Fig. 2 do you think best illustrates their relationship? 2. Explain your choice. Describe why you think they are or are not closely related in their daily function and policy-making. In recent years, as a result of the efforts of those responsible for health promotion initiatives locally, nationally and internationally, and of a rapidly growing body of research evidence, the importance of a very broad range of determinants of health is increasingly being recognized. The determinants include both characteristics of individuals, such as their genetic endowments, personal health practices and coping skills, and characteristics of the settings in which these individuals live, work and play, such as the safety of physical and natural environments, stress in daily life at work and home, resources such as income, education and social support available to cope with daily life, availability of health services, and the degree of hope, control, respect, dignity and equity provided by II - 30 Learning to live with Health Economics their societies. The characteristics of individuals and their settings are often not separable; they interact in critical ways – for example, it is now well known that the use of tobacco is socially conditioned. The determinants of health operate throughout the life cycle, again in complex interactions (for example, low birth weight is one of the best single predictors of future health), and early childhood development experiences can set the stage for both positive and negative health trajectories. Specific examples of the broad range of determinants and their significance for the harmonization and integration of health and economic policies can be found in HEALTH21: an introduction to the health for all policy framework for the WHO European Region (1) and HEALTH21: the health for all policy framework for the WHO European Region (2). Some of the most frequent differences of perspective between ministries of finance and of health concerning investments for health, policy focus and the role and organization of health care systems are described below, with reference to Fig. 1 and 2 in Module 2.2.1. Investments for health The breadth, complexity and interactive nature of the determinants of health mean that many investments for health do not fit neatly into only one sector. Because of this, it is frequently the case that neither ministries of health nor ministries of finance can or do take the broad perspective required by Fig. 2. Consumer products Transportation Defence Education Income security programmes Safe workplaces Primary care Hospital services Pharmaceuticals Resources Consumer products Transportation Defence Education Income security programmes Safe workplaces Other determinants of health Health services Primary care Hospital services Pharmaceuticals Other Other Other Health Other determinants of wellbeing General wellbeing Fig. 2. The overall resource allocation problem Learning to live with Health Economics II- 31 For example, tax or transfer policies to reduce the financial burden on low-income parents with small children may not be seen as a health investment by either ministry. The health ministry, preoccupied with issues of health service delivery and finance, may view the policy as well outside its scope, even though it may recognize income as a determinant of health. The finance ministry, although it deals with tax policy, will probably not characterize it as a health issue. This highlights the need for interministerial mechanisms to address policies and investments for health which might otherwise fall neglected between sectors. One possible mechanism is interministerial committees composed of elected politicians or their senior deputies, charged with the responsibility of examining intersectoral influences on health and opportunities for intersectoral collaboration. Given the multiple demands on such officials, the creation of these

mechanisms will depend on a recognition that the problems are substantial. In fact, in the narrowest view of both ministries, it may seem that only arrows A and B in Fig. 1 in Module 2.2.1 matter for health policy. For most of this century, the primary health policy concern of governments in industrialized countries has been the development of health insurance and delivery systems to make available access to primary, secondary and tertiary medical and hospital care. Although this narrow view of what constitutes health policy has often been challenged by public health officials, most of the resources that societies commit to improving health are in fact still channelled through health services. Policy focus The two ministries differ significantly in this regard, which is to be expected given their mandates. The ministry of finance is concerned with fiscal indicators, and especially fiscal crises such as deficits and national debt. The ministry of health is concerned with indicators of the population's longevity and quality of life and with health crises such as the spread of infectious disease or inadequate medical facilities. The ministry of finance typically pursues expenditure control as one policy goal. The ministry of health is often seen as undermining the achievement of that goal through its objective of securing more resources to address what seem to finance officials to be ever-growing needs and demands from health care providers. And just as the ministry of finance does not routinely consider the effect of its macroeconomic policies on the health of individuals and groups, so the ministry of health often gives the impression that its use of resources is the most important possible use and that the ministry of finance should therefore accede to its constant requests for more. In terms of Fig. 1 in Module 2.2.1, the ministry of health may be characterized as concerned primarily with arrow A (from health care to health) and to a lesser extent with arrow D (the effects of the economy on health), while the ministry of finance, if it is concerned at all, may focus on arrow F (the strain that health care spending places on national income). Almost always the ministry of finance is more successful than the ministry of health in requiring other government ministries to adopt its ethos. Because fiscal crises are the highest priority (other than immediate threats to national security) of all governments, all ministries are typically required to consider in detail the revenue and expenditure consequences of their policy and programme decisions. By contrast, despite growing evidence that the determinants of health lie primarily in factors outside the control of health ministries, these ministries have usually been unable to persuade their governments to require that all ministries screen their policy and programme decisions for their potential impact on the health of individuals and populations. II - 32 Learning to live with Health Economics Health care systems Finance ministries often view health care as not being different from other products and services and therefore apply standard forms of economic analysis to the health care industry and the market for health services. These analyses frequently lead to recommendations to use market mechanisms such as prices (user charges), competition and consumer choice to structure health care delivery and allocate health services. In contrast, health ministries are typically more aware of the special characteristics of health care which have led the governments of most industrialized countries, for the most part, to remove essential health services from private market allocation. This relates particularly to competitive, unguided, for-profit markets. In all countries there is use of market-like mechanisms within publicly financed systems to pursue public objectives, and there is further experimentation with this internationally. Unlike most goods and services, health care is not consumed for its own sake but for the expected positive contribution it will make to an individual's health. It is the health that is of value to the individual, not the health care. Indeed, in the absence of illness or potential illness, individuals not only do not wish to purchase health care but actively seek to avoid it. Expenditure on health care, both individual and collective, is therefore in a category which might be termed

“regrettables”. Health care is not “demanded” in the economist’s usual meaning of the concept of demand, like the demand for televisions or cars. It is consumed because it is needed, where need is defined by some external standard, both medical and social, to be the capacity for the individual’s health to benefit from the consumption of the health service. Health care providers play a critical role in the setting of the external standard for need, through their expert judgements in diagnosis and provision and prescription of services. These providers occupy a special role as economic actors, unlike normal economic suppliers and firms, because the services that they demand, legitimize and prescribe on behalf of patients are often their own. Most modern societies make the ethical judgement that need should be the basis on which essential health care is distributed. Whether or not totally unregulated markets could perform this function, they are largely rejected because they use ability to pay and willingness to pay rather than need as their allocation criteria, which frequently excludes individuals in need from receiving important services. A second fundamental characteristic of health care is that the need for it is uncertain. Although the need for some health care such as preventive services may be foreseen, for the most part need is unpredictable because the incidence of illness or injury for an individual is itself unpredictable. It is much more predictable for groups and populations. Therefore some forms of insurance can be effective and efficient economic mechanisms for seeing that individuals in need receive services. Although private insurance is one policy option for governments, in most societies health care insurance is wholly or partially in the public sector, due to the extensive and well known market failure associated with private insurance for health services. One of the most serious types of market failure of private health care insurance is if low-income and/or unhealthy individuals (often the ones who most need care) cannot afford or are denied insurance coverage. A third characteristic of health care which reinforces the case for a significant national role in the financing of health services is that there are more of what economists call external effects associated with the consumption of health care and the health of individuals than is the case for many other Learning to live with Health Economics II- 33 consumer products. An individual may be concerned about others’ health for selfish reasons, as in the case of infectious diseases, because another person’s ill health or failure to consume health care pose risks to him or her. But this type of externality is only part of the story. The almost universal observation is that people genuinely care about others’ health and ability to afford health care independent of selfish motives, in a way that they do not care about others’ consumption of televisions or cars. The identification of need therefore establishes a collective ethical obligation that something should be done, which in turn leads to a significant role for the state in monitoring, regulating and financing health care systems, and sometimes providing services directly. A fourth and final distinctive characteristic of health care is that, unlike many other products, consumers are generally poorly informed about their need for specific health services and unable to evaluate in advance what the services will do for them. For this they require and consult health care providers, who act as their agents in deciding what they need to consume. Health care providers, although they are the suppliers and not the consumers, in fact often possess a much greater degree of knowledge about the consumer’s needs, the services available, and the effectiveness of the services in meeting the consumer’s needs than do the consumers themselves. Indeed, to call the buyers of health services consumers in any conventional economic sense of that word is questionable. Although advances in information technology and the increased availability of consumer information (e.g. self-help guides, and “report cards” on hospitals) may improve the amount and flow of useful information to prospective patients, they will not alter significantly the fundamental asymmetry in information between providers and patients in relation to the content of a particular episode of care, which is highly specific to the individual. This

asymmetric possession of knowledge by the providers of care, and the influence it gives them over the utilization of health services, have far-reaching implications for the organization of health care systems and the use of market mechanisms. For example, the licensing of providers and a reliance on professional self-regulation to protect consumer-patients against misleading claims and poor quality or harmful services are necessary features of health care systems. The case for market mechanisms, such as user charges, to allocate services or control expenditure is considerably weakened, since health service utilization is not primarily consumer-driven. And the strong economic and political position accorded to health care providers, when coupled with the observation that it is they who define need, means that there will always be pressures for expansion of health care systems. The health care industry has much less in the way of internal equilibrating mechanisms than most other industries. Exercise 2 1. (a) For participants from the ministry of finance or other economic sectors. What do you see as the biggest single problem that the health sector poses for your national economy? If you were minister of health, how would you propose to solve it? (Participants from the health sector to comment and respond after all answers have been given.) (b) For participants from the ministry of health or health sector. What do you see as the biggest single problem that the economic sectors and the general functioning of the national economy pose for the health of the population? How would you propose to solve it if you were minister of finance? II - 34 Learning to live with Health Economics 2. Read the script of the brief role-play (Annex 1) entitled “Panel of ministers: economic policies and health care reform”, written by Keith Barnard and Professor Béatrice Majnoni d’Intignano for the WHO Ljubljana Conference on Health Care Reform in 1996. Alternatively, two participants could be assigned in advance to familiarize themselves with it and read the script to the group. If so, a participant from the ministry of finance should read the part of the minister of health, and a participant from the ministry of health should read the part of the minister of finance. (a) In the play, Barbara Luke, the minister of health, is concerned about the percentage of national income spent on health. Discuss the factors that you think should be considered when this is being decided. Do these factors differ from those you would consider when deciding the percentage to be spent on education, telecommunications on agricultural subsidies? (b) In the play, Robin Matthew, the minister of finance, is concerned that important health problems are not being tackled rigorously. Discuss improvements which could be made in health programmes in your own country which might appeal to the minister of finance because they would help the national economy. Annex 1. Panel of ministers: economic policies and health care reform5 Introduction by moderator Ladies and gentlemen, ministers of health, I am delighted to welcome you to Ljubljana for an extraordinary session to exchange experience on health care reform. Before we get down to business, just imagine, that we are moving to EUROPIA, a country psychologically if not physically near the heart of the Region. We are privileged to observe Robin Matthew, the rising star of the government, as the clever minister of finance, who is waiting in a restaurant for a private meeting with a colleague ... Here she comes, the seasoned minister of health, Barbara Luke. Just listen to what they are saying. Scene: In the restaurant: a dialogue on health policy between colleagues Robin: As you know, we might become a candidate country to join the European Union. Therefore, we will look carefully at things like the European monetary system and other criteria by which our case will be judged. Frankly speaking, it will be a big headache for any finance minister. Barbara: How so? I thought it was supposed to be a big opportunity. Robin: Well, we need to slim down public expenditure, cut taxes and remove some of the costs which are now falling on employers. I am just giving you a chance to look at the issues from my perspective. I think that you will have to rethink ideas in your sector. Barbara:

But surely we cannot cut health expenditure any further. The percentage going to health is already way below our neighbours', and our doctors and nurses continue to be relatively poor. Robin: I am sorry I must be blunt. How could I explain to other ministers why I should treat you differently? Why are you so special, this is what they will say. These are tough times for all of us, even if there was no economic decline. 5 This role-play was prepared by Keith Barnard of Gothenburg, Sweden and Professor Béatrice Majnoni d'Intignano, University of Paris, France. Learning to live with Health Economics II- 35 Barbara: Well, I don't see myself behaving differently from any other health minister. When I meet my fellow health ministers from other countries, they all ... Robin: Exactly! When I look at your colleagues in the other countries, they are also having a hard time making the health industry more efficient and competitive. Barbara: I am sorry, Robin, you are quite wrong there. You are ignoring all the serious reform initiatives that have taken place in countries across Europe. In our different ways we are trying to find the balance – the public/private mix, as some of us call it. Everyone of us, we are trying to bring expenditure under control. Precisely because health is not an industry, we have to think about the quality of care people get and how it meets their needs. Robin: Look, in education, they tell me how many schools and teachers they need, and why. They tell me how many university places, and we all agree that we are investing in education and training. In social security, they tell me how many elderly people there are, how many disabled, how many longterm employed, and I work out what we can afford. But you ... Barbara: Wait a minute! Robin: You tell the public that we are getting healthier, and yet every year you tell me that you need more money. Is your budget supposed to be open-ended upwards? You lead people to think that their care is free, but someone must be paying the bill. Barbara: No, no, I do not mean that everything needs to be free. There is a lot of self-care in families and among friends. People buy drugs over the counter. There is a tremendous interest now in things like nutrition and promoting health. None of this comes into your calculations. The fact is that whenever we maintain or restore someone's health, we have helped the individual as well as the economy. We have enabled a disabled person to go on living an independent life, we have a schoolchild who can study uninterrupted and we have made workers become more productive. Robin: That I do not doubt. My job is to get public expenditure under control. Consumer goods improve the standard of living, remove household chores, maximize people's leisure possibilities. They give them the chance to get on with the kind of lives they want to live. The health sector only drains resources away from the nation. Where is the profit? Barbara: Of course we do not have profit in the health care sector, nor are we trying to turn our health care into a trading company. We have health gain, but it is also clear that family doctors and community nurses reduce and prevent the need for 4 expensive services. Robin: If it's that straightforward why are you always asking for more money and expecting the health insurance people to hike up their premiums? Or is it because some important health problems are not tackled vigorously, for example accidents, suicides and heart attacks, especially among young men? Barbara: On the contrary. We have made a good start with making people more aware of how to use appropriate services appropriately and how to look after themselves. The quality of services is constantly being improved. Robin: I have not tried to cut your budget for its own sake. Anyhow, I cannot get this country's economy on the right track unless all ministers are seen to exercise restraint. For example, there are several countries which use fewer beds and doctors. And let me remind you that we have closed quite a number of old-fashioned industrial plants in other sectors. Barbara: I don't think that you have grasped my message. Good social policies, including health, will make people believe that this is the country they want to live in. People will then truly make our country a place worth living in. Good social policy supports economic policy. I need your help to provide our people with a set of decent essential services. Do

that for us, and we can assure you, you will eventually see the economy grow, as we all want to see it grow, and that will lift the pressure off II - 36 Learning to live with Health Economics both of us when we come to talk about budgets in the future. You see, really you should ask me what I would do with a 5% increase in my budget. I have plenty of practical ideas. Robin: I have to rush now. It was nice talking with you. We can discuss this again when the economy has recovered. The scene fades ... References 1. HEALTH21: an introduction to the health for all policy framework for the WHO European Region. Copenhagen, WHO Regional Office for Europe, 1998 (European Health for All Series, No. 5). 2. HEALTH21: the health for all policy framework for the WHO European Region. Copenhagen, WHO Regional Office for Europe, 1999 (European Health for All Series, No. 6). Further reading AMICK, B.C. ET AL. Society and health. New York, Oxford University Press, 1995. DAHLGREN, G. ET AL. Health impact assessment of the EU common agricultural policy. Stockholm, Swedish National Institute of Public Health, 1996. DONALDSON, C. & GERARD, K. Economics of health care financing: the visible hand. London, Macmillan, 1993. EVANS, R.G. ET AL. Why are some people healthy and others not? The determinants of health of populations. New York, Aldine de Gruyter, 1994. EVANS, R.G. Strained mercy: the economics of Canadian health care. Toronto, Butterworths, 1984. LEIDL, R. Health care and its financing in the single European market. Amsterdam, IOS Pres, 1998. MOONEY, G.H. Economics, medicine and health care. Sussex, Wheatsheaf Books Ltd, 1986. New orientations for social policy. Paris, Organisation for Economic Co-operation and Development (OECD), 1994. RATNER, P.A. ET AL. Setting the stage for health impact assessment. Journal of public health policy, 18(1): 67–79 (1997). RICE, T.R. The economics of health reconsidered. Chicago, Health Administration Press, 1998. Learning to live with Health Economics II- 37 2.3.2 Reallocation of resources for health – a conceptual framework Greg Stoddart6 Key messages • The optimum use of scarce resources to improve health involves continuing consideration of the possibilities for allocating and reallocating resources within the health care sector. This can involve both existing resources and additional resources that become available. However, intersectoral collaboration for health improvement will frequently require reallocation of resources from one sector to another. • Reallocation of resources can be categorized in five main types: reallocations among health care activities; reallocation among non-health care activities within the health system; reallocations between health care and non-health care activities within the health system; reallocations between the health system and other systems; and reallocations among other systems. • Another important dimension of the conceptual framework for resource reallocation is the type of resources being reallocated. Although financial flows (budgets) are usually the focus of attention, it is important to remember that the resources themselves are the "real" things that go into health-influencing activities, i.e. the time of individuals, their skills and know-how, equipment and supplies, and the space provided by buildings and the land which they occupy. • Decisions to reallocate resources for health improvement can be made at different decisionmaking levels, and in both the public and private sectors. Tutors' notes Although this module can be used to help achieve an appreciation of the complexity of intersectoral reallocation of resources, its primary purpose is to assist in the analysis of such reallocations. Analyses may include measurement of changes in actual resource flows. However, they may also include assessments of the potential resource flows that are implied by policy changes under consideration. The cube in Annex 1, Fig. 5 (relating to an application of a conceptual framework in the Canadian province of Prince Edward Island) may therefore be used in a discussion of the opposition that is likely to be encountered in the implementation of policies involving reallocation of resources. The framework can be used by several groups, identified on the vertical axis of

Fig. 5, including elected politicians, bureaucrats in health and other ministries, managers in regional authorities (at either the level of the overall authority or at the level of specific programmes) and service providers. An interesting exercise suggested during the development of this module was to use it to prompt comparison of the effects of spending money in different areas, including outside health care. In Fig. 2 (under Discussion), this means asking what could be done with a specified amount of money if it was reallocated along any of the five arrows A–E. In terms of economic concepts, this would be a vivid illustration of measuring the opportunity cost of resource use in real terms. For a simple example of this, see Labonte (1), who asks what else could have been done with a specific amount of new funding which was given to hospitals in the Canadian province of Ontario. 6 This module was prepared by Professor Greg Stoddart, Centre for Health Economics and Policy Analysis, McMaster University, Canada (e-mail: stoddart@mcmaster.ca). II - 38 Learning to live with Health Economics A different exercise, more planning-oriented, would be to select some policy examples from HEALTH21: an introduction to the health for all policy framework for the WHO European Region (2) and HEALTH21: the health for all policy framework for the WHO European Region (3) and ask what actions would have to be taken within the cube in Fig. 5 to implement these policies in the specific jurisdictions of the students. Introduction Intersectoral collaboration for health improvement has been one of the main themes of recent health promotion initiatives internationally. It has figured prominently in the WHO health for all strategy, in WHO activities such as the Healthy Cities project, and in the 1986 Ottawa Charter for Health Promotion. It is also an integral component of HEALTH21 (3). Intersectoral collaboration encompasses numerous activities – partnership, advocacy, regulation, demonstration and negotiation among them – and has led to several general policy strategies, such as the creation of supportive environments (physical, social, economic, cultural and spiritual) for health, strengthening community action, the development of personal coping skills and health competencies, building healthy public policy, reorienting health services, and fostering public participation. Many of these involve, indeed require, significant reallocation of resources either implicitly or explicitly. Yet it is difficult to find a conceptual framework within which to plan, monitor or evaluate such reallocations. This module develops one possible conceptual framework for the reallocation of resources for health improvement. The framework is illustrated with a brief case study concerning the Canadian province of Prince Edward Island, where a team considering a range of possible health reforms used the framework to evaluate the extent of resource reallocation which would be involved and the barriers to achieving this. Fig. 1. Conceptual framework: components Health care Non health care Other systems Health system Learning to live with Health Economics II- 39 Discussion Allocations and reallocations take place whenever plans are established, budgets are formulated or action is implemented. The conceptual framework makes use of an important distinction between the objectives and consequences of resource-consuming activities (policies, programmes or other actions). Many activities explicitly have the improvement of health as their primary objective. Health care is the leading example, but other "non-health care" activities, such as nutrition programmes and counselling services not provided through the health care sector or by health professionals, also have health improvement as a primary objective, or at least as one of several important objectives. Occupational or road safety programmes, in both the public and private sectors, are other examples of activities outside the traditional health care system which are nonetheless directed toward health. The combination of largely separate sets of health care and non-health care activities is shown in Fig. 1 to comprise the health system, defined as activities undertaken with health improvement as a primary, or one main, objective. Of course, the health system is only one system whose activities have health consequences. The

4

energy, agricultural or tourism policies of both public agencies and private firms, for example, may directly affect health. So too may activities as diverse as the tax policies of governments, the working conditions provided by private employers, the availability of special educational programmes for preschool children or adolescents in socioeconomically disadvantaged groups, and the effectiveness of law enforcement systems in assuring personal security. Therefore a large number of other systems, often not seen as directed primarily toward health objectives, produce significant health consequences. These other systems are grouped together in Fig. 1, but individual sectors could be displayed depending on the analysis being conducted.4 The activities of both the health system and other systems consume resources. Of course, close attention is given to the allocation and possible reallocation of resources for continuing activities within a given sector, which relates to the discussions in the module on efficiency. In reality, constant adjustments are being made and changes do not have to be large to be useful. However, the focus here is on attempts to change activities, which will require resource reallocations. Five principal types of reallocation, i.e. resource flows, can be identified in the framework: A. reallocations between health care activities (for example, from hospital to community-based services); B. reallocations between non-health care activities within the health system (for example, from counselling for adolescents to housing adaptation for older people); C. reallocations between health care and non-health care activities within the health system (for example, from medical clinics to shelters for homeless persons); D. reallocations between the health system and other systems (for example, to hospitals or nonhealth care programmes for adolescents or older people from education or transportation); E. reallocations between other systems (for example, from tourism or agriculture to education or transportation). These principal analytical types of reallocations are shown by arrows in Fig. 2 corresponding to the letters A–E above. Resources may flow in either direction along these arrows. In practice, the placement of a specific activity within the circles of Fig. 1 and 2 may sometimes be difficult, as II - 40 Learning to live with Health Economics boundaries can be blurred. Nevertheless, the analytical distinction between objectives and consequences on which the framework is based is a useful place to begin. The framework can be enhanced by considering two additional dimensions beyond the type of resource reallocation. The first is the type of resource being reallocated; the second is the identity of the decision-makers responsible for the changes in activities affecting resource allocation. Although money (most often represented by budgets of both public and private enterprises) is not a resource in itself, financial flows are often a useful and reasonably accurate marker of changes in priorities and resource allocation. To economists, money and budgets represent and convey command over resources, but the resources themselves are the “real” things that go into health-promoting or health-affecting activities – i.e. the time of individuals, their skills and know-how, equipment and supplies, and the space provided by buildings and the land which these occupy. If these real resources are used for one purpose, they are not available for another purpose, from which comes the economist’s concept of “opportunity cost”. By asking questions such as “What are the opportunity costs of the current allocation of resources?” or “Are there health gains to be made by using resources differently?”, opportunities for intersectoral reallocation can often be identified. Note that it is not always necessary to change financial flows and budgets to accomplish a reallocation of resources. Significant changes in the allocation of individuals’ time, or the uses of equipment, supplies and facilities can sometimes occur without appearing as official budget changes. This may be an advantage in implementing reallocations in some circumstances. Regarding the identity of decision-makers, it is important to realize that decisions to reallocate resources for health improvement can be made at different levels of

influence and in both the public and private sectors. Elected politicians or senior officials of government ministries are often associated with high profile, national policy decisions. But regional or community authorities often play significant Fig. 2. Conceptual framework: flows of resources Health care Non health care Health system A B C D Other systems E Learning to live with Health Economics II- 41 Fig. 3. Conceptual framework: three dimensions roles as well, and at lower levels programme managers or even individual service providers can make reallocations through decisions on how their time is spent, or upon which activities and groups they choose to focus their efforts. Again, in the private sector, although many decisions are made at the (perhaps multinational) senior executive level, there is often scope at much lower levels of management or programming for decisions to be taken which affect the health of both workers and individuals outside the firm. The three dimensions – type of reallocation, type of resource, and identity/level of decisionmaker – are combined in Fig. 3 to extend the conceptual framework of Fig. 2. The result is a cube within which intersectoral reallocation of resources for health can be conceptualized and discussed. Actual or potential reallocations can be positioned according to their key characteristics. The framework has several possible applications. It might provide a useful planning tool, or be an important starting point for developing intersectoral strategies that rely on resource reallocation for effective implementation. It may also be useful as a monitoring or auditing mechanism, or for evaluation Facilities and space Equipment and supplies Human resources Type of resource Budgets National/ international Regional/subregional Local/community Identity/level of decision-maker A B C D E Type of reallocation A Among health care activities B Among non-health care activities within the health system C Between health care and non-health care activities within the health system D Between the health system and other systems E Among other systems II - 42 Learning to live with Health Economics of progress toward reallocation objectives. Specific subcomponents or "slices" of the cube may be more useful than others for some purposes. For example, the focus at higher levels of decision-making may be on budgets and financial flows, while at middle or lower levels the focus may be on human resources or facilities. The framework can be used prospectively as well as retrospectively. Each specific application will require its own adaptation and development of the framework for the local context. Note also that there may be a need to prepare the ground for reallocation decisions, if they are to be broadly accepted and implemented on an effective and sustainable basis, especially if they are likely to affect significantly key stakeholders, including the general public. Changes, especially if they are outside the health sector (or not wholly within it), generally cannot be commanded by health authorities. Other stakeholders have to be convinced that they are in their interest, or at least acceptable, bargaining and negotiations tend

4 to be involved, and win-win situations are more likely to be implemented. Such changes may be easier to achieve in a growing economy, where resources are available to ease the concerns of others, than in a declining economy with fierce competition to retain existing levels of resources. These matters relate to discussions elsewhere in the learning materials, including in Module 4.2.2 on the political management of public health. Exercise 1 Considering the conceptual framework presented in Fig. 2 for intersectoral reallocation of resources, assume that a given bundle of resources, say US $5million per annum (represented by so many doctors, so many nurses, so much in the way of facilities, equipment and other inputs) is available in the health care sector. • Could the resources be used in other ways within the health care sector to produce more health gain (or other desirable outcomes)? • Would your response be altered if the time period being considered was longer or shorter? • Would the resources produce more health gain if used elsewhere (e.g. in the non-health care component of the health system or in other systems)? Would you apply the conceptual framework in the same way if the decisions were being considered prospectively or evaluated

retrospectively? If not, what would the differences be and why would they occur? Would your approach be affected by whether the resource allocation and reallocation decisions were being taken: • in a declining rather than a growing economy? • by decision-makers at different levels? • in the private sector rather than the public sector? • with or without prior preparations among the stakeholders and the general public? An application of the framework Annex 1 to this module provides an application of the conceptual framework in the Canadian province of Prince Edward Island. The provincial government sought to evaluate progress towards intersectoral reallocation of resources for health improvement using the framework, having devolved decisionmaking for many health care and social services from the provincial level to regional health authorities. The health care services and programmes included hospitals, home care, mental health, public health, Learning to live with Health Economics II- 43 dental public health, community health centres, laboratory services, ambulance services, rehabilitation services and long-term care. (Pharmacy and direct payments to physicians were not decentralized.). The non-health care services and programmes included housing, child and family services, addiction services, job creation programmes, community development, youth centres, services for older people, income security programmes, and adolescent group homes. Among regional authorities, those in Prince Edward Island have budgetary and management responsibility for the broadest scope of health and social services in Canada. Since an important policy objective of the reforms was to encourage a focus on preventing illness and promoting health by addressing the social and economic determinants of health, the regional authorities were given integrated "block" budgets for all of the above services combined. How to allocate the budgets (and the command they provide over real resources) among the array of services and programmes was largely left to the discretion of the authorities. Exercise 2 Using the material on Prince Edward Island presented in Annex 1 (or another case with which you are familiar from your own experience or in your own country) consider the following. • What was the overall pattern of reallocation; and what was the process through which it took place? • Was the process controlled by the health ministry (or another ministry), or did it involve negotiation, bargaining and compromise? • Have some of the reallocations been offsetting ones? • How frequent are the reallocations between the health system and other systems (and between the health care and non-health care components of the health system)? Do such reallocations tend to become more prevalent over longer periods of time? Annex 1. Making resource shifts supportive of the broad determinants of health: the Prince Edward Island experience (summary)7 This report presents the results from a case study of cross-sectoral resource allocation (CSRA) in the human services system in Prince Edward Island (PEI). The research builds on previous research that examined the role of block funding as an instrument for implementing health reform, based on a population health approach. It therefore extends and elaborates the pictures we have of CSRA in PEI from 1993 to 1999. Fig. 4 and 5 reproduce Fig. 2 and 3 in the context of the Prince Edward Island reform.8 The specific programme, service and system entries within the circles of Fig. 4 represent those of relevance there, with the titles that apply in this particular set of government departments and agencies. 7 Annex 1 to Module 2.3.2 was prepared by John Eyles, Greg Stoddart, John Lavis and Colin McCullan (McMaster University), and Tina Pranger and Laurie Molyneaux-Smith (PEI Department of Health and Social Services). The principal investigator was John Eyles (McMaster Institute of Environment and Health, e-mail: eyles@mcmaster.ca). 8 In this case, only four of the five types of ("cross-sectoral"– the term used locally) reallocation are examined. Reallocations within other systems (arrow E from Fig. 2) are outside the scope of reform. The decision-making focus is also restricted to the public sector, as is evident from the vertical axis of Fig. 5 (Annex 1). II - 44 Learning to live with Health Economics

Fig. 4. An application of the conceptual framework to the Canadian Province of Prince Edward Island Note: All sectors in the health system are under the budgetary control of regional health authorities except physician and pharmacy services. The health reform of the early 1990s in PEI emphasized the broad determinants of health, a client focus in service delivery, the pooling of human services, the integration and coordination of services and the establishment of regional governance. PEI created five health regions to provide hospital care, social services, income security, public housing and a range of other services, but excluded physician and pharmaceutical resources and education. Each health region was provided with block funding to enable resources to be moved to address the broad determinants of health. These changes largely survived a change of government in 1996. Health care Social services Other systems Health system A B C D E Home care Hospital services Physician services Manors Mental health services Public health Pharmacy Dental health Laboratory services Ambulance services Rehabilitation services Special projects Housing Addictions services Child and family services Job creation and employment enhancement Services for older people Community development Youth centres Adolescent group homes Income maintenance Economic development and tourism Provincial treasury Agriculture, fisheries and forestry Education Higher education Transportation and public works Training and adult learning Environmental resources Provincial affairs and attorney general Learning to live with Health Economics II- 45 Fig. 5. The intersectoral cube applied in Prince Edward Island Facilities and space Equipment and supplies Human resources Budgets Types of resources Elected politicians Ministry officials Regional boards, Chief excecutive officers Programme managers Service providers Level of decision-making A B C D Type of cross-sectoral reallocation This research set out to discover if CSRAs had been made in line with the broad determinants of health and if the mechanisms put in place to assist this process, particularly block funding and regional governance, had been successfully applied. To these ends, 58 interviews with key informants holding different positions in all five health regions and the Department of Health and Social Services and in various sectors were carried out during the winter of 1998–1999. The interviews were taped and transcribed for analysis and interpretation. In spring 1999, a focus group reported back on the preliminary findings. This provided a useful data collection tool as well as an opportunity to confirm researchers' interpretations. A dissemination meeting held in winter 2000 served similar purposes. The key informants identified 74 CSRAs, two thirds of which had involved staff, space, equipment and information. Twenty-five had involved financial transfers, mainly within sectors. Some of the financial transfers reallocated money from community programmes to hospital care. In fact, most respondents believed that the acute sector had gained most in recent 4 years in PEI both through CSRAs and increases provided through the provincial budget. While most CSRAs occurred within the broadly defined human services system, some involved partnerships and resource-sharing with other sectors, particularly education. Of the instruments put in place to assist moves towards the broad determinants of health, regional governance was seen primarily as a facilitator. It helped ensure intraregional integration and coordination and could provide local, accountable services to the regional community. It had, however, appeared to lessen interregional cooperation and made such programmes more difficult to fund and put into II - 46 Learning to live with Health Economics operation. Many respondents felt that regional governance required the presence of a strong standardsetting central authority to ensure equity of provision between regions. Block funding was viewed less positively. Some saw it as facilitating CSRAs through providing one budget for a range of services whereas others saw some of its features – no carry-over, programme surpluses going to pay down programme deficits in the same health regions, and line-by-line accounting and accountability – as detrimental to population health resource

shifts. Three times as many barriers as facilitators were mentioned by the key informants. Among the facilitating mechanisms was the development or emergence of an organizational culture supportive of population health. Important features of this culture included committed leadership, big picture thinking, and motivated and enthusiastic staff who were willing to work together to integrate services for clients. In fact, greater integration was seen as one of the most positive outcomes of the changes in the human services system. The barriers were seen to be structural in nature, involving the political nature of health care, public perceptions and preferences, union agreements, opposition from physicians and level of funding. In fact, the nature and context of funding were seen as vital by most informants and they frame many of the implications identified in this report. Budgetary practice and culture shape what can be achieved: if there is no budget line, there is no activity. For those wishing to advocate, nurture and implement CSRAs in line with the broad determinants of health, recognition of the limits of what is possible (and how the CSRAs may be increased in scope) is an important policy implication.

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2.4.1 Economic and social determinants of health Béatrice Majnoni d'Intignano8 Key messages • Industrially-induced epidemics play a key role in health status and health capital in modern societies, either developed or not. • These industrially-induced epidemics are the consequences of the marketing activities and strategies of certain industries in terms of the morbidity, mortality and disability of the targeted groups. • There is an apparent health divide in the population between the two groups of educated and non-educated people. • Valuation of their own health and attitudes towards professional health services are very different in these two groups, with consequences for their health behaviour, including their use of health care. Tutors' notes Students could discuss the key messages with the following two questions and the four exercises set out at the end of the module. First, explore the concept of industrially induced epidemics in your country or environment. Which industries are involved? Are they national, foreign or international businesses? Which are more dangerous for young people/for men/for women? Are women less sensitive to the efforts of these businesses to promote risky products or services? Are the messages which are being promoted different according to sex? How can the companies' behaviour be regulated? Think of tobacco abuse. Should tobacco be banned? Should the price of tobacco be increased? What is the

price elasticity of the demand for tobacco according to age and socioeconomic status in your country?9 Are there ways in which “disinvestments” in health are systematically related to industrial epidemics? 2.4 Individuals, groups and health capital 8 This module was prepared by Professor Béatrice Majnoni d’Intignano, University of Paris XII, France (e-mail: bmajnoni@wanadoo.fr). 9 Price elasticity is a measurement of the degree to which the demand for a product will respond to changes in price. If a product is price-inelastic then the demand does not change so much with the price (e.g. bread). The demand for a product that is price-elastic changes substantially even with small changes in price (e.g. a particular brand of washing powder). II - 48 Learning to live with Health Economics Secondly, explore the differences in behaviour towards health in your society between those with poorer health status and those with better health status. Are these differences linked to salaries, to information, to education or to something else? Should those making less rational use of information and the available health services be seen as victims or as culpable of wilful self-neglect? The module is appropriate to several different groups: · the general public; · health care professionals (doctors, nurses, etc.); · civil servants in health or social care ministries and in local government; · representatives of nongovernmental organizations and other grass roots, voluntary and community groups; · elected politicians. Introduction On what does the health of a nation, a group or an individual depend? What makes the difference? Where are changes occurring? The main factors are changing, as are the reactions of modern populations to those factors. The first part of this module analyses the concept of health capital and its main socioeconomic determinants. Health determinants include biological as well as economic, social and behavioural factors, and the concept of industrially-induced epidemics. The first part of the module includes the distinction between individual and collective aspects of health capital and contains an application of this approach to the United States. The second part of the module explains why modern societies are more and more divided into two groups regarding human capital, and wonders whether inequalities are likely to increase or decrease in the future. It is important to be aware that social stability in a society is affected by the general level of health which, in turn, is due to many different factors, including education and income. Finally some advice is proffered on policy to regulate or curb industries which are responsible for induced epidemics. The socioeconomic determinants of health capital The concept of health capital is derived from Becker’s concept of human capital, introducing qualitative aspects into the economic concept of labour (1). Human capital depends both on professional skills and on health status. The idea was developed by Grossman in the 1970s (2,3), and presented both as an individual and as a collective investment, because health brings output benefits and utility benefits to
4 human beings and their societies perhaps to a greater extent than any other goods or services currently consumed. Investment in the human being and overall society is the input to health capital and the output is consumption. HEALTH21 (4) states the various determinants of health and how they interact (Fig. 1). Differentials in income and in access to education and employment are closely linked to differences in health and the quality of life between countries and between socioeconomic groups. Socioeconomic circumstances alone do not determine health. A person’s state of health depends on the interplay between health determinants, life events and individual choices. Being poor means that people are at a disadvantage when it comes to making choices and coping with stressful events. Learning to live with Health Economics II- 49 Fig. 1. Main determinants of health Health is highly sensitive to socioeconomic circumstances, even in the most affluent societies, and therefore to socioeconomic policy and action. The main determining factors include income, education and employment. Multisectoral action is required to create sustainable health and development, by encouraging all sectors to identify and achieve mutual gains in terms of health

and economic development. Such action should make it easier for people to make healthy choices, and empower individuals, local communities, and private and voluntary organizations to facilitate health gains in different settings, including homes, workplaces, schools and cities. HEALTH21 proposes certain strategies: • policies to ensure more equitable distribution of income and wealth (such as progressive tax systems), social security benefits for specific age groups or low-income families – all important elements; • a guarantee of free health care and education, as well as subsidies for housing; • nurturing of parental interest in and enthusiasm for education; • allocation of economic resources to educational programmes according to clients' needs and the requirement of social equity; • setting higher educational standards and ensuring smaller class sizes; • promotion of training and employment, especially of those who have experienced less favourable conditions in early life; • flexible arrangements for sharing work; • alternative forms of social and community work, to avoid long-term structural unemployment; General socioeconomic and environmental conditions Housing Agriculture and food production Education Work environment Other Health services Water and sanitation Employment 4 1 2 3 Age, sex and hereditory factors Lifestyle factors II - 50 Learning to live with Health Economics • adjustment of labour market policies to diminish the risk of discrimination on the basis of gender, age or ethnicity. Individual aspects To focus particular attention on the quality of the health outcome produced by health programmes it is valuable to do the evaluation by a cost–utility analysis. This measurement counts utility in terms of healthy years or quality-adjusted life-years (QALYs). Any human being is born with an individual stock of health capital and at any year of life, health status can be measured by a quality of life weightor index-rated from 0 (death) to 1 (perfect health). The advantage of the QALY as a measure of health outcome is that it can simultaneously capture gains from reduced morbidity (quality gains) and reduced mortality (quantity gains), and combine these into a single measure. Health can be measured either on the operational level, by demographic indicators such as life expectancy, or by negative indicators such as infant mortality, disability rates, specific standardized mortality rates (from cancer, heart diseases, accidents, etc.) and avoidable death rates (from childbirth or from asthma, etc. which could be avoided with proper prevention or health care intervention). These indicators can be objectively measured. Other indicators are more subjective, such as selfperception by the individual of his or her own health, stress or anxiety. When gender is taken into account, differing pictures can emerge from the various indicators. For example, if health is measured through physical and objective morbidity or mortality rates, women appear to enjoy much better health than men. They live longer (6 to 8 years in France, a bit less in other countries), and they suffer less from cardiovascular diseases and cancer (except specific feminine cancers). If, on the other hand, social and physical self-perceived indicators are taken into account, such as stress and depression, contrary results are often observed. Women say that they suffer more than men. Many studies recording self-perception of health reveal apparently poorer health among women than men. Life contains a series of critical transitions, which are marked by particular life events (4,6). Adopting a life course approach to developing policies for health recognizes the complex interactions between such life events, biological risks and health determinants. Health can decline (or improve) at any point during a person's life through chance, circumstances and choice. A life course approach tends to ensure better health outcomes for the entire population in the medium and longer terms. At each transition point throughout life, supportive action at both the macro and micro levels can enhance health and wellbeing. For example, since parental poverty and ignorance can start a chain of social risk that damages health over the entire life course, investing in the socioeconomic wellbeing of parents and families is crucial to the promotion of health and development. Fig. 2

shows how, at any age, individual health capital is influenced by several factors. General socioeconomic and environmental conditions Since the nineteenth century, increasing living standards have had a determining influence on health status and the increase in life expectancy, especially on the main illnesses that used to kill the young, such as tuberculosis (7). Nowadays, the influence of wealth on health can still be seen by comparing life expectancy in western and eastern Europe. In the Russian Federation, as an example, life expectancy has decreased since 1990 from 70 to 65 years for men, partly due to increasing poverty. According to the United Nations report on human development in 1997 (8), poverty rates increased from 4% to 40% Learning to live with Health Economics II- 51 of the Russian population. Another example concerns the differences in diet between Nordic and Mediterranean populations, which have a major influence on cardiovascular diseases. Housing, education, health services, etc. The effectiveness of the health care services and the overall health care system, specifically curative medicine, exerts an important influence on individual health capital. Other important factors include public health policies and collective illness prevention, and the priority given to information, disease prevention and research. Individual health capital can be affected, either positively or negatively, by services in sectors other than health, e.g. in education, housing, income support and public order. Lifestyle factors and gender Industrially-induced epidemics, including those arising from tobacco, speed, noise, alcohol, drugs and arms, and excess weight, explain much of the excess mortality of men as compared to women and among poorly educated people. They also (partly) explain the decrease in life expectancy for men in the newly independent states caused by accidents, violence and suicide. Such epidemics are the consequences of the marketing activities of certain industries in terms of the morbidity and mortality of the target groups. These industries take advantage of risk-taking people. Again, gender makes a major difference regarding life expectancy and health status because of attitudes towards risks (Table 1). The gender difference appears to be reduced in highly educated populations such as teachers. Fig. 2. The individual's health capital 0 1 0 10 20 30 40 50 60 70 80 90 Health status (QALY) Appendicitis Traffic accident Lung cancer Death Perfect Childbirth/Stress Depression/Retirement/Divorce Osteoporosis/ Loneliness Asthma Males Females Age Source: Majnoni d'Intignano, (6). II - 52 Learning to live with Health Economics Table 1. Probability of dying at the age of 35–60 years, France (%) Men Women Unskilled workers 28.0 7.5 Industrial workers 21.0 7.5 Employees 18.0 6.0 Teachers 7.5 5.0 Source: Institut National de la Santé et de la Recherche Médicale (9). Taking risks is still in modern societies often regarded as typically masculine behaviour. The promotion of products such as cars and motorcycles, tobacco and arms encourages such behaviour. This phenomenon is universal,

observable in the United States, in Europe and in developing countries. Differences towards risk, arms abuse and drug consumption are apparent among ethnic minorities and the well-to-do population in the United States (and appear in death rates by cause). The promotional efforts of the tobacco industry are especially important in the countries of central and eastern Europe. The lung cancer epidemic began in the 1950s among men and reached a climax around 1965 in the United Kingdom and around 1990 in the United States. It began later among women and is still increasing, whereas it is stabilizing or decreasing among men in most countries. There are two periods in life when men suffer from an excess mortality rate compared to women. In France, at the age of 20 years, men have a mortality rate that is 3.5 times higher than women. This is due to accidents, drugs, violence and taking risks, which have an immediate effect on their lives. The second period is around 60 years old, when the mortality rate of men is 2.5 times higher than that of women, due to factors such as tobacco-dependent cancers and alcoholic liver cirrhosis. These are illnesses that kill about thirty years after the risky behaviour was adopted. Age, sex and heredity factors

Some people suffer from genetic illness and some have specific risk factors, so that their probability of suffering from, say, diabetes or colon cancer is higher than for people who do not suffer from these disadvantages. Health also declines with age, but differently for men and women. Fig. 2 illustrates the changing pattern of health capital for individuals, by gender, over the life cycle, when the health capital of the individual depends on five factors: 1. genetic endowments 2. life risks 3. the environment and the industrial epidemics to which the individual is exposed 4. the behaviour of the individual and the social group to which he or she belongs, and 5. the health care system, including prevention and health promotion. The man and the woman start life with a higher or lower genetic endowment (1), which can be favourably affected by preventive health measures (5) and health education (including dental care and diet). Young children of both sexes are affected by appendicitis (2), are treated by the health care system (5), and suffer from diseases resulting from pollution (3). The boy suffers from an accident (3), which results in significant disabilities for all his life. The young woman has three children (1), which disadvantages her in her professional career and results in depression, causing a deterioration in her Learning to live with Health Economics II- 53 health (1) and (4). The man is a smoker, which causes lung cancer (3) and after 65 years of age a further sharp fall in his health status (5). He dies of the disease at 75 years. The woman lives for another nine years but suffers from osteoporosis in her later years and depression brought on by her isolation. Her health capital declines very sharply after 80 years of age. During his or her life, either the man or the woman causes a traffic accident (3), which does not appear on their own body but results in someone else becoming handicapped for life. The influence of particular health care services and the overall health care system is only responsible for about 20–30% of the individual's health status (7). The rest is determined by all the other factors which have just been examined. Grossman (2,3) has presented improving individual health capital as an investment. People invest in better health so as to improve their working capacity and their future income. Other authors present it as a pure consumption of wellbeing, comparable to consumption of any other goods and services. Different lifestyles and attitudes towards health influence greatly the health status outcomes for individuals and social groups, as illustrated in Table 1; this shows the different probabilities of dying between 35 and 60 years in France according to socioeconomic status and gender, under the same health care system. The worse-off suffer mainly from more digestive, cardiovascular and cancer injuries and fewer preventive activities, and only partly from more work accidents. Collective aspects Many societies take into account their health capital and treat is as a collective investment. Bismarck tried to avoid social revolution when he introduced a new type of professional health insurance during the 1880s. Lloyd George thought of strengthening the work force of British industry and the capacity of the Empire's army when he did the same in the years after 1910. Nowadays, in developing countries, according to the World Bank, improvements or deterioration in health (particularly women's health) is a major determinant of human capital, specifically that of children. A striking example is the damage from AIDS in Africa (6). In old industrialized countries, as in Europe, with high unemployment and little progress in the health capital of the young, health capital is mainly improving among the retired. It may then be considered more as a cost and as a pure consumption of wellbeing rather than as an investment in the productivity of the nation. The value of young people both to their families and to society, in terms of the investment made in their education and health and their future wealth-creating power, explains why some countries are trying to prevent or to stop industrially-induced epidemics, for example, in Scandinavia. These are spreading fast in the countries of central and eastern Europe, where tobacco, speed, violence, drugs and noise are destroying part of the human capital. Where

are the gains for American health capital? Cutler & Richardson (10) have evaluated the change in health capital of the American population between 1970 and 1990. They add the life expectancy of the population, weighted by a QALY index, taking into account the prevalence of the most important causes of illness and a QALY weight for each disease. As an example, they take into account decreasing illnesses such as vision problems, and increasing illnesses such as cardiovascular diseases, cancer, diabetes and orthopaedics. They also take into account II - 54 Learning to live with Health Economics the improvement of health status in the case of vision, and cardiovascular diseases or orthopaedic disabilities, and the stability of the quality of life in the case of cancer or diabetes. Table 2 illustrates some of these data. Table 2. Disease incidence and quality of life in the United States Prevalence QALY 1970 1990 1970 1990 Vision 48 30 0.84 0.93 Cancer 11 19 0.70 0.70 Cardiovascular diseases 65 99 0.57 0.71 Diabetes 46 54 0.65 0.66 Orthopaedic conditions 102 135 0.70 0.88 Source: Cutler & Richardson (1998) (10). The results are interesting. The authors show that not only did the health capital of the American population increase during the period, mainly for elderly people (+65 years), but it increased more than the costs of the health care system. Between 1970 and 1980 it was increasing for the black population faster than for the rest of the population but has been decreasing relatively since. Finally, the health capital of women was much higher than for men. Different attitudes towards health Two groups can be distinguished in the populations of countries with liberal and capitalist economies, according to level of education. There is a strong social class gradient in educational qualifications. Children who have completed pre-university education or higher technical training or above have much better chances in terms of their health, as well as in occupation and income. Furthermore, education is a very strong predictor of making healthy choices. Higher and other forms of education foster innovation, which in turn sustains economic development. This section draws on research from the Institut National de la Statistique et des Etudes Economiques (INSEE) and the Institut National de la Santé et de la Recherche Médicale (INSERM) summarized in Majnoni (6). People in the first group (the integrated group) accept the democratic and individualist values of modern societies. They are on the whole educated people, of the younger generations, families with two working parents, or women. They have a positive attitude towards health capital and a voluntary and strategic behaviour pattern in their lives. They try to improve their health capital, or at least to protect it, through avoiding risks (women driving slowly, for example) or practising prevention (teeth brushing, cancer detection, sport). Their demand for health is shaped by their life-cycle, first of all to reproduction, i.e. birth control, safe delivery, child screening, therapeutic abortion and genetic medicine. Then there are demands linked to adult wellbeing,

such as stress control and improvements in their working capacity. Finally, there are demands linked to ageing and dying, such as prevention of dependency and suffering, final care at home, and sometimes a conscious choice between a longer life or a better life. Information and their own decisions influence the demands of this group on the health care system. More and more there is a demand for ambulatory care, or day care in hospitals, partly because of their more and more qualified familial environment. These people will benefit in the future from radical changes in medical technologies which will be increasingly oriented towards prevention, genetic Learning to live with Health Economics II- 55 medicine and changes in individual behaviour (e.g. nutrition, sport, stress management, risk avoidance). They are willing to pay for more information and prevention and for better health care services. A sort of health consumerism is arising, sometimes even medical tourism (to Switzerland or to the French seaside for thalasso-therapy, for example). These people increasingly get their information from the media and the internet. Their consumption of pharmaceuticals is increasing. The second group consists of poorly educated people, young males, single mothers

and their children or broken families (probably about 10–20% of the population). They often have a fatalist attitude regarding health and relatively little perception of the importance of health capital. Sometimes they even have a destructive attitude towards life and their own life expectancy, as when they behave as risk lovers: driving too fast, abusing drugs, alcohol and tobacco, and using arms, for example. More and more families in this group consist of unemployed people who are supported by the welfare state, so they do not perceive any link between their health status and their future income. They are the main sufferers from industrially-induced epidemics, particularly young men aged around 20 years, who die from homicide among gangs, and men around 60 years, who die from lung cancer or liver cirrhosis. A dramatic example is the difference in life expectancy between black and white males in the United States (6 years). The demand for health care facilities from this group is for emergency services, hospital treatment or treatment for catastrophes such as war. The differences in health service consumption between these groups is well documented (6). The first group asks for more prevention, dental care, specialized medicine and outpatient hospital care; and highly specialized hospital care in the case of severe disease. The second group asks for more general practitioner care, hospital care for any disease or emergency care in case of accident. Undesired pregnancies are more frequent among poorly educated young women than among middle-class and well educated girls. It often leads to dependence on the welfare state and to the poverty trap, i.e. future poor health status for the woman as well as for her child. The divergence between the two groups seems to be universal. It is specifically noticed between men and women in the United States and France, but also in the rest of Europe. Either in liberal and regulated capitalist societies such as the United States or those of western Europe, or in transition economies such as the countries of central and eastern Europe, society is increasingly divided into such two groups mainly defined as (i) an educated, qualified and working population, or (ii) an uneducated, poorly qualified and unemployed population. The differences between the two groups are increasing with technical progress, competition and the internationalization of production and trade. Consequently, inequalities are likely to increase. There is a risk of segregation in the response of the health care system to the demands of these groups. One solution to the problem of the failure of poorer people to invest in their own health or that of their families is to give them a realistic and positive future. People who do not see a future for themselves will not invest in it (and the other way around). To reach these people the strategy should be to give them suitable information about the health system and their rights to use it. Everybody should have the possibility, and be provided with the capacity, to gain access to the health care system and to use what it can offer, and to look forward to good health. This is consistent with target 2 of HEALTH21 (4) which is concerned with equity in health. It states that “By the year 2020, the health gap between socioeconomic groups within countries should be reduced by at least one fourth in all member states, by substantially improving the level of health of disadvantaged groups.” II - 56 Learning to live with Health Economics Exercise 1 Which factors have changed between the nineteenth century and the end of the twentieth? In your opinion, which factors will dominate the twenty-first century? Exercise 2 How would you build a QALY index? Would you ask physicians to provide the data? Patients? Do you think the result would be the same? What factors would you take into account: lifestyle, working capacity, family life, suffering, the risk of dying, or others? How would you weight and aggregate them? Exercise 3 In your country, do you consider improving the health status of young people and of the working-age population as a productive investment that could improve the global productivity of the economy, or as an individual concern? Give examples. Is your answer linked to unemployment? Exercise 4 Suppose your country is poor or the health services

are constrained by cash limits. This means that the amount of money available for costly surgery is strongly limited and there are waiting lists. Should surgeons consider tobacco and alcohol abusers as culpable or victims? Who should be first on the list for treatment? Are the poorer alcoholics or smokers victims of their social condition or responsible for self-neglect? Should they be first on the list, or last? Should the physicians ask them to promise to stop smoking or drinking in excess after the operation? How would you solve this moral conflict yourself if you had to decide and control the physicians' choice? What kind of resources or action could solve the dualism of modern populations? Better information? Price policies which increase the price of tobacco and alcohol? Policies which ban smoking or drinking among the young population? References 1. BECKER, G.S. Human capital: a theoretical and empirical analysis with special reference to education, 2nd ed. New York, National Bureau of Economic Research, 1975. 2. GROSSMAN, M. The demand for health: a theoretical and empirical investigation. New York, Columbia University Press, 1972. 3. GROSSMAN, M. On the concept of health capital and the demand for health. Journal of political economy, LXXX(2): (1972). 4. HEALTH21: the health for all policy framework for the WHO European Region. Copenhagen, WHO Regional Office for Europe, 1999 (European Health for All Series, No. 6). 5. DAHLGREN, G. & WHITEHEAD, M. Policies and strategies to promote social equity in health. Stockholm, Institute for Future Studies, 1991 (reproduced in HEALTH21: the health for all policy framework for the WHO European Region. Copenhagen, WHO Regional Office for Europe, 1999 (European Health for All Series, No. 6), p. 68. 6. MAJNONI D'INTIGNANO, B. Santé et économie en Europe – Que sais-je? Paris, Presses Universitaires de France, 2001. 7. MCKEOWN, T. The role of medicine: dream, mirage, or nemesis?, 2nd ed. Oxford, Blackwell, 1979. 8. Human development report 1997. New York, United Nations Development Programme, 1997. 9. Les inegalités de santé. Paris, La découverte/Institut National de la Santé et de la Recherche Médicale (INSERM), 2000. 10. CUTLER, D. & RICHARDSON, E. The value of health: 1970–1990. American economic review, 88(2): 97–100 (1998). Further reading DRUMMOND, M. ET AL. Methods for the economic evaluation of health care programmes. Oxford, Oxford University Press, 1997 (1st ed. 1987). MAJNONI D'INTIGNANO, B. & ULMANN, P. Economie de la santé. Paris, Presses Universitaires de France, 2001 (Collection THEMIS Economie). PHELPS, C.E. Health economics, 2nd ed. Reading, MA, Addison-Wesley-Longman Inc, 1997. Report on health care utilization and expenditures. Paris, Centre de Recherche, d'Etude et de Documentation en Economie de la Santé (CREDES), annual publications. Données sociales. Paris, Institut National de la Statistique et des Etudes Economiques (INSEE), 2002/ 2003. 2.4.2 Individual behaviour and public policy Björn Lindgren9 Key messages • Although health is determined by

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many factors beyond the control of the individual – heredity, environmental factors and chance – a person can still influence his or her state of health to a considerable degree. • Thus, individual behaviour is one of the determinants of the incidence and prevalence of disease and the costs of ill health. • Economic analysis can be used to understand individual health behaviour and differences in health among people. • Many agents, besides the individual, have incentives for investing in the health status of an individual – family, neighbours, friends, schoolmates, employers, local organizations, the health care sector and society at large – but their extent, ways, possibilities and impact are different. • Public policy measures can improve health either (i) directly through improvements in the environment, or (ii) indirectly through changes in the regulation and incentive structures that influence individual health behaviour. • Population health depends both on the health of individuals and its distribution. 10 This module was prepared by Professor Björn Lindgren, University of Lund, Sweden (email:inger.lindgren@luche.lu.se), with valuable contributions from Eva Bondar, Budapest, Hungary (e-mail: bondar_eva@s16.kibernet.hu).

with Health Economics • The extent to which a society relies on individual or collective approaches to the “production” of health and the emphasis it puts on individual health or the distribution of health depend on historical circumstances and values, economic and social development, and the distribution of income, wealth and other life chances. Tutors’ notes A wide range of groups within the health system would benefit from understanding more about individual behaviour and health, the impact on individual health of family and society at large, and policy options for increasing population health – an objective which includes improving both individual health and its distribution among the population generally. This module may be of particular interest to those involved in designing direct regulations and financial incentives to encourage healthy lifestyles and promote healthy environments, including: • health (and health care) policy-makers • civil servants and other governmental technical staff • public health officers • health service managers • health care practitioners • consumers. The module contains boxes illustrating the issues presented in the text, several questions for discussion in a country-specific context and an exercise designed to illuminate possible contradictions and the conflicts of interest between different agents in society when it comes to solving a particular health problem. Introduction The consequences of good health for the national economy have been recognized by economists for a long time. The American economist Irving Fisher was one such: in 1906 he wrote: The true “wealth of nations” is the health of its individuals. A nation consisting of weak, sickly, and short-lived individuals is poor compared with a nation whose inhabitants are of the opposite type. (1) The objective of cost-of-illness studies has been to quantify these economic consequences, or rather the consequences for the national economy of ill health. Economists may still be occupied with such issues, but the main interest of modern health economics is with the individual’s health as such, with its determining factors, with the distribution of health among individuals, and to what extent health can be affected by public policy measures. This is the topic to be analysed in this module. For a long time good health was considered to be a gift of God and ill health to be God’s punishment or just bad luck. Modern medicine has taught us, however, that good health may often be restored if the appropriate measures are taken. Modern genetic research proves more and more the importance of hereditary factors. Epidemiologists have identified risk factors in the environment which may damage the health of the individual. Public health scientists emphasize the importance of the individual lifestyle. So, nowadays health and its determining factors are regarded as a rather complex phenomenon. Chance, bad luck or uncertainty is still there though. Learning to live with Health Economics II- 59 Box 1. The opportunity cost of illness to society There is an opportunity cost to society due to the existence of diseases and injuries: the opportunity cost of illness. Table 1 shows some estimates for Sweden. Conceptually, the opportunity cost of illness can be considered as consisting of two separate parts: • direct costs, which reflect the value of the resources shifted from other sectors of the economy into the health care sector due to the presence of illness, thus representing the sacrifice of other goods and services required in order to obtain health care; • in addition, if there were no diseases or injuries, more could be produced of every good or service; the indirect costs of ill health reflect the value of those goods and services that could have been produced if people had not fallen ill, and thus they represent the loss of potential productivity, an opportunity gone forever. There are, of course, welfare losses, besides the loss of desirable goods and services. Such negative effects as pain, suffering, insecurity and grief associated with illness are sometimes called intangible costs. Since there is no realistic possibility of estimating the size of the total intangible costs, there has been no attempt so far to do so. Table 1. Cost of illness in Sweden, 1991. The six most costly disease categories. Lost future earnings

discounted at 5%. Swedish kroner Percentage (billion) of total Diseases of the musculoskeletal system 60.9 23 Mental disorders 41.0 15 Diseases of the circulatory system 32.5 12 Diseases of the respiratory system 22.1 8 Accidents, poisonings, and violence 21.3 8 Neoplasms 16.0 6 All diseases 269.8 100 Source: Lindgren (2). Health economists are very interested in the role of the individual as a key decision-maker. There are several good reasons for adopting this approach when it comes to health. Even though other family members, friends, neighbours, and fellow citizens may care for an individual, at the same time both feeling some responsibility for that person's health and enjoying his or her good health, it is undoubtedly the individual himself or herself who primarily benefits from his or her own good health. It is also the individual who has the primary responsibility for his or her own health, who is the ultimate "producer" of his or her own health. Certainly – as emphasized above – much of the recovery and healing from an illness can be attributed to the physician and to the use of various health care resources, but without the cooperation of the individual mentally and physically, the healing process will slow down or even fail. The notion of "producer of health" does not, however, mean that the individual (with or without the help of a doctor) determines his or her state of health – heredity, environment and chance are three factors which may interfere – but rather that the individual can and does influence it quite substantially. II - 60 Learning to live with Health Economics This module consists of four parts: 1. the individual as producer of health 2. individual, health and family 3. individual and health in a wider social context 4. individual health, public policy and population health. The individual as producer of health As Irving Fisher emphasized, health is a form of capital. Health and education are the two types of human capital in which the individual can invest. Wealth is a third type of capital, but one which can be physically distinguished from its owner. As a consumption good, good health is desired because it makes people feel better. As an investment good, good health is also desired because it increases the number of healthy days available to work. As such, good health increases the possibilities to earn income. A fourth type of capital has been introduced recently as a new analytical concept: social capital, in which the individual can invest (social interactions, social network, etc) or society (policies and institutions which improve social cohesion). Social capital can be demanded both for its own sake and for its positive effects on health (see Box 1). At an aggregate level, investments in all four types of capital are preconditions for economic growth, which in turn is a prerequisite for improvements in the health and welfare of the population. Individual health is produced by choosing a particular lifestyle, making better or worse health states more or less probable, and by using medical advice, pharmaceuticals, hospital treatment, etc. in order to restore good health. How well this transformation of health inputs into health
4 outcomes goes depends on (i) the present state of health technology and (ii) the individual's knowledge of how to use the technologies available. However, even if the individual had the best knowledge in the world about health technologies, he or she would not necessarily choose the one which maximizes his or her own health. Why? One reason is that there are various constraints which the individual faces, including time, money, prices and government regulation. No man or woman will have more or less than 24 hours a day as long as they live; thus, in a way, time is one of the more equally distributed assets there is. But time could be used for so many interesting and pleasant activities other than those related to health. Money, i.e. income and assets, certainly tends to be more unequally distributed than time, but even a millionaire in money terms will notice that there is an upper limit to what it is possible to do with his or her money. Prices introduce a barrier, almost no matter how low they are, and regulation imposes constraints. Individuals are often not allowed to buy pharmaceuticals in a pharmacy, for instance, unless they have got a doctor's prescription. There may also be restrictions on where pharmaceuticals are supposed to be sold. The

finance and delivery of health care is heavily regulated in more or less all countries. So the individual has to choose what to do and how to spend his or her money during his or her lifetime. This individual decision-making process can formally be thought of as an optimization problem, in which the individual's objective is to maximize his or her preferences while taking all the previously mentioned constraints into account. The solution to this optimization problem determines a lifetime plan of how time and money will be used and distributed among various activities and periods of time. The economist takes for granted that the individual knows best about his or her own preferences – that is a cornerstone of economic theory. Economists also claim that preferences are stable. Learning to live with Health Economics II- 61 But individual preferences differ. We have all heard about the advantages of not smoking, of getting regular exercise, and of avoiding all kinds of risky activities. Some people take more notice of this advice than others, not because of ignorance or inability to pay but (i) because of differences in their willingness to trade off health risks for the various pleasures and conveniences of daily life, and (ii) because of differences in their willingness to make sacrifices in order to reduce the probability that they might later regret not having acted in a certain way. This means that individuals can choose quite differently despite the fact that they may meet exactly the same constraints, and that maximizing individual preferences is not at all the same as maximizing individual health. However, even if individual preferences really are stable, individual behaviour can be affected in various ways by changing the constraints that individuals face. For example, the price of health services can be more or less subsidized; risky consumption can be more heavily taxed; or the borderline between prescription and over-the-counter drugs can be changed. If one of these constraints is changed, then the old plan may no longer be optimal for the individual. If so, his or her whole planned lifetime pattern of activities will change as a result. Moreover, since the only constraint which is the same for everyone in every all country is the number of hours in the day, whereas incomes, prices and regulations differ, individuals will have quite different optimization problems – and solutions – depending on the country in which they live. Age and investments in health In biological terms, ageing occurs as a consequence of cells slowing down their replication rate. The function of the bodily system deteriorates. The physiological changes also have negative effects on the function of the brain. To the economist, ageing can be interpreted as depreciation of the individual's health capital. The rate at which an individual's health stock depreciates generally varies over his or her life-cycle. It may decline during some (early) periods of life, but eventually, as the individual ages, the depreciation rate increases. Thus, the health capital of older people is likely to deteriorate faster than the health capital of younger people, at least after some years. This depreciation in health capital can be totally or partly offset by gross investments in health. The higher the depreciation rate, however, the larger the costs of health investments. This means that the optimal health capital is greater for an individual younger person than an older one. Thus, an individual will generally increase his or her gross investment in health as he or she ages, while at the same time his or her health capital declines. As the health capital declines, eventually the costs will be prohibitively high for a health investment to prevent his or her death. In this sense the individual chooses not only his or her health status while alive, but also the expected time of death. Income and investments in health Income (or wealth) is highly interrelated with health. Good health improves productive capacity, and wealth makes it possible to invest in health. So, there is a strong correlation between the two, but the direction of causation seems to be two-way. At the national level, wealthier countries (in terms of GDP per capita, for instance) are usually also healthier (e.g. in terms of life expectancy). At the individual level, poverty is the largest single determinant of ill health. Living in

poverty is correlated with higher rates of substance use, depression, suicide and violence. An increase in the wage rate increases the benefits from health (in terms of increased consumption possibilities of all kinds) and implies, ceteris paribus, a higher optimal level of health stock and larger health investments. II - 62 Learning to live with Health Economics Education and investments in health People with more education are significantly healthier than those with less. This observation can be explained both from the supply side and from the demand side. On the one hand, education is one factor making people more efficient in "producing" their own health. The more educated people generally know more about health, health risks, healthy lifestyles and the potential effects of medicines. This lowers the cost of investment in health and the optimal level of health capital will be higher, other things being equal, for educated people. Educated people may also enjoy eating nutritious food or doing physical exercise; they may enjoy a glass of wine instead of half a bottle of vodka a day; they may enjoy feeling and looking good. This raises the benefits of investment in health, so that the optimal level of health capital will also be higher for educated people from this point of view. Empirically, the demand effect would, of course, be difficult to distinguish from the supply effect. Uncertainty, risk aversion and investments in health Uncertainty does abound in health. An individual may face three types of uncertainty in health. First, there is uncertainty as to the current size of their health capital. Second, there is uncertainty about the rate of depreciation of their health capital. Third, there is uncertainty about the effects of the various inputs in the health production function on the health capital. In an uncertain world, risk-averse individuals make larger investments in health and have greater expected health stocks than they would in a perfectly certain world. The first type of uncertainty induces a demand for information. To some degree uncertainty may be reduced by check-ups by a doctor, but no diagnostic tests are perfect and the doctor may sometimes be just as uncertain as the individual about the latter's health status. Uncertainty, especially of the second type, also induces a demand for health insurance. Since there is uncertainty about the effects on health capital of various measures intended to improve health (the third type of uncertainty), the individual should diversify his or her health investment activities. For example, physical activity may not be the only way an individual needs to try to maximize his or her health; it could be better to reduce those activities and at the same time stop smoking, reduce drinking and reduce the intake of fats. However, people do have different attitudes to uncertainty. Some like to take risks, some do not and others are neutral. Most people seem to prefer not to take risks, but the degree of risk-aversion varies both between people and over the lifetime of a person. The stronger an individual's aversion to risk, the less will he or she take part in activities which may damage his or her health. It should be noticed that it
4 is the individual's own subjective risk or uncertainty which matters. Perceptions about risks may, of course, be correct, even if they differ from objective risks which are calculated for a larger, heterogeneous group. More information about objective risks may change behaviour. Thus, an individual perceiving that he or she has underestimated his or her own risk will reduce the level of risky activity. Conversely, an individual perceiving that he or she has overestimated the risk will tend to increase the level of risky activity. Time preferences and investments in health Most people have a positive rate of time preference, i.e. a preference for receiving benefits today rather than in the future and for incurring costs in the future rather than today. There are a number of reasons why this is so. The individual may have a very short-term view of life, living for today rather than caring about an uncertain future. Such a person may also think it unnecessary to care too much, Learning to live with Health Economics II- 63 Box 2. Education and health People with more education are significantly healthier than those with less. Why? Does increased education cause better health, or are health and education correlated for other reasons? The answer to this question has obvious

policy implications. On the one hand, education may increase the individual's efficiency in producing good health. Educated people have got the know-how needed to stay healthy, and they know better how to use various market inputs and their own time in order to produce good health. If this is true, it should also be expected that a father's or a mother's education would make them more efficient producers of good health in their children as well. On the other hand, the correlation found between education and health may be related to a common factor, such as the individual's time preferences. Since the benefits of education lie in the future, individuals with low discount rates will be more likely to invest in education. Also health investments have distant payoffs, such as extended life years towards the end of the individual's life. So, individuals with low discount rates will invest more both in education and in health. It might also be the case that education changes people's time preferences with similar results. Most empirical studies have used formal education (schooling) when investigating the relationship between education and health. There are studies supporting the hypothesis that schooling directly improves health status, but there is also conflicting evidence. Because of its important policy implications, this will certainly continue to be an area of extensive applied health economics research. However, schooling in general may not per se raise the efficiency of health production, since it is often concentrated on issues other than personal health. A policy that emphasizes investment in education specifically devoted to health information – to health production technologies – may thus be relevant, regardless of the causal links between schooling in general and health. Sources: Berger & Leigh (3), Fuchs (4) and Grossman (5). because he or she will probably be wealthier by the time the future comes anyhow (as the long-term trend in economic growth indicates). Money will be worth more today than in the future for the individual. That most people actually have a positive rate of time preference is obvious, since it is possible to obtain a positive rate of interest on relatively risk-free investments. People also have different time preferences, however; some care more for the future than others – they have lower rates of time preference. This affects health investment decisions. The lower the rate of time preference, the less would it cost to invest in health and the larger would the individual's health capital be. Thus, differing time preferences may be a reason for differences in two persons' levels of health. If two people are equal in all characteristics but time preferences, the individual with the lower rate will have better (expected) health status. He or she will engage in health-promoting and preventive activities, avoid hazardous jobs and workplaces, look for safe housing areas, and consume little alcohol, tobacco, drugs and other goods and services which may damage his or her health in the future. Questions for discussion 1. "Individual behaviour is one of the determinants of the incidence and prevalence of disease and the costs of ill health." Explain. 2. What are the main factors contributing to the health capital of an individual, and to what extent are these factors subject to control by the individual? 3. How do these factors vary among individuals and over time? 4. In what ways does an individual's health capital depreciate? II - 64 Learning to live with Health Economics 5. Even though older people make greater use of health care services, their stock of health capital decreases. Why? 6. "The individual chooses not only his or her health status while alive, but also the expected time of death." Discuss. 7. What is the effect of risk and uncertainty on individual investment in health, and to what extent are risk factors interrelated and cumulative? 8. What is the relationship between education and health, and to what extent may decisions to invest in education and health be interrelated and cumulative? 9. Which factors determine observed differences in health among individuals? 10. Will information about the health risks of smoking increase or decrease inequities in health? The individual, health and family Most people live in families. The health status of an individual during

his or her lifetime is largely influenced by this fact. Family members typically care for other relatives' health: this may include devoting time and income to that person in order to make investments in his or her health. Thus, the time and money budget constraints are extended for people who live in families in comparison with those who live alone. Since uncertainty prevails in this area, the family may also be seen as a form of health insurance. Conflicts between parents, among children and between parent(s) and child(ren), on the other hand, as well as parent(s) favouring one child may in varying degrees be harmful, or at least not beneficial, to health. The early years of life The child typically grows up in a family, which may take various forms, of which two parents and siblings or just one parent are only examples. Within the family, factors and decisions determining the child's present and future health status are not influenced directly by the child. Family-related factors are vital for a healthy start in life for individuals. For instance, the better a mother's state of education, health and nutrition, and the higher her income or wealth, the greater is the chance of a successful pregnancy. Birth weight, which is an important indicator for the development of physical and psychological health during childhood and later in life, is related to family income, but also to the smoking behaviour of parents. Childhood and adolescence are also mostly spent in families. Later, individuals start to live on their own, at least for some time, until they form new families. These are periods of intellectual and physical development in a person's life during which lifelong social and health skills are acquired. Young people make their own decisions about behaviour which directly or indirectly affects their health, but these decisions are influenced to a large extent by their families. Their psychological health is also closely linked to whether they have a caring and supportive family. Families with better education and higher incomes are often also better informed about both positive and harmful health behaviour and facts which influence present and future health behaviour. Family habits and attitudes are key to forming healthy (or, for that matter, unhealthy) lifestyles regarding, for instance, eating, physical activity, smoking, drinking and the taking of drugs by young people. Also, the material and cultural resources of a family have a major influence on a child's educational attainment. Children who attain higher levels of education have much better chances in health, as well as in occupation and income. Learning to live with Health Economics II- 65 Adult life The health status of an individual at the start of adult life is partly determined by health investment decisions taken or induced by his or her parents. Family background is also likely to have influenced his or her preferences for healthy or unhealthy life choices or for particular activities. The allocation of time and money for health investments within a family (with or without children) also affects adult people. Marriage means pooling resources and knowledge as well as specialization according to
4 comparative advantages. This increases the consumption possibilities in comparison to living separately and improves the incentives for investing in health. Health will thus be better among married than unmarried persons. The distribution of health may not be equal, however, for a number of reasons. The single most important reason for specialization is the presence of children. Typically, specialization means that the wife specializes in household activities and, hence, invests in householdrelated human capital, while the husband invests in market-related human capital. This increases the husband's wage-rate and, as a result, the family's interest in investing in his health. The wife's position in marriage and the incentives for investing in her health could be strengthened by increasing her external options. Overall, the incentives for investing in the health of the other spouse may not be strong enough to be efficient, since human capital cannot be part of what is divided in case of divorce or constitute grounds for alimony. Divorce is detrimental to both children's and adults' health. However, the way in which divorced parents are treated by legislation will affect the distribution of health capital not only for divorced parents and their children but

also within marriage. Thus, if regulation does not promote investment in the health of children living in separated families, this might lead to a situation in which the health of children that have not experienced divorce may also be reduced. Since divorce rates have risen in most countries during recent decades, it has become increasingly important – also for the sake of health – to analyse the institutions that regulate divorce. Ageing In later years, when children have left home, the family will again consist of just two people. In many cases this means growing old together, but with increasing divorce rates many old people will spend the rest of their lives alone. Eventually, even married elderly people will lose their life companion. Children and friends can partly compensate for the loss of support, but divorce and widowhood are important health risks. Other major threats to the health of older people are dementia, depression and suicide, cancer, cardiovascular diseases, osteoporosis, incontinence and injuries. On the other hand, many older people remain active and fully independent until very close to the end of their lives. There are many opportunities for elderly people to stay active and interested in life. Education levels are gradually rising and there are new opportunities for older people to continue education. In Sweden and in several other countries, older people have established political pressure groups in order to voice their demands in relation to the development of social and health policies and services. Not enough is being done, however, to meet the changing needs and expectations of older people and to prepare for an increasingly ageing Europe. Human capital for health, in terms of its consumption elements, is highly relevant for older people (in terms of social cohesion from the viewpoint of the overall society and in terms of personal consumption from the viewpoint of the individual). Human capital for health, in terms of its investment II - 66 Learning to live with Health Economics elements, may appear to be less relevant, once older people have left paid employment. However, it may still retain some relevance, for example, in relation to voluntary or other contributions, and also since a social determination to deny much care to older people may provide incentives for them to act differently (perhaps less productively) earlier in their lives, for example, when they are still in employment or raising children. Older people are a resource for their families and for society at large. They can make important contributions to the quality of life, health and wellbeing of the family. Their experience and accumulated wisdom are essential assets in child-rearing and for other adults in the family. The efficient use of this capital would benefit society as a whole long after regular employment has ceased. Questions for discussion 1. What are the relationships between the health status of an individual and his or her family circumstances? 2. To what extent do they differ systematically by gender and age? 3. To what extent are the factors determining health within a family interrelated and cumulative? 4. To what extent are they under the control of the individual? The individual and health in a wider social context The individual is also part of a wider social context. He or she usually has relatives and friends and may meet and know many other people while taking part in various, more or less daily, activities. He or she may go to school, be a university student, be in paid employment, or be unemployed. The social networks and the relations to school and workplace are factors that directly or indirectly influence an individual’s health status during his or her lifetime. So do the physical and social environments in which the person lives. Social network There is ample empirical evidence that belonging to a social network is beneficial to health. The existence of a network can be seen as an extension of the individual’s resources and knowledge and may, hence, ease the tensions in critical periods of an individual’s lifetime, such as leaving the parental home, job insecurity, onset of chronic illness, or loss of spouse and close friends. The social network can also exercise some regulation and control over individual health-related behaviour such as eating, drinking, smoking and exercise habits. (This kind of influence on

individual behaviour towards what is the socially acceptable norm within the network does not necessarily have to be positive, of course. In some cases, it might be detrimental to health.) To a large extent the health benefits of a network may come as an extra bonus for an individual who loves good company, enjoys taking part in sports or cultural activities, or is an active member of a religious organization. So investments in a social network may most often be made for other purposes than health. The investment is never without a cost, however. It takes time and sometimes money to engage in activities which involve meeting people, and it takes time and sometimes also money and Learning to live with Health Economics II- 67 Box 3. Social capital and health Social interaction – in various forms and degrees – is common for all economic agents. Social interaction is beneficial for at least two reasons. First, it contributes directly to the utility of those who participate in it.4 Second, social interaction may improve the allocation of resources by improving information-sharing, coordination of activities and collective decision-making. Social capital consists of all the networks, norms, structures and institutions that facilitate social interaction in society. There is ample empirical evidence that belonging to a social network is beneficial to health. The existence of a network can be seen as an extension of the individual's resources and knowledge and may, hence, ease the tensions in critical periods of an individual's life-time, such as leaving parental home, job insecurity, onset of chronic illness, or loss of spouse and close friends. The social network can also exercise some regulation and control over individual health-related behaviour. Socially cohesive societies are those with well functioning institutions and developed civic communities. A lack of social cohesion shown, for instance, by indicators such as income inequality and unemployment, can have significant negative health consequences. It has been known for a long time that unemployment and health are negatively correlated. Moreover, in recent studies it has been suggested that not only absolute income levels, but also the relative distribution of income within a society, are important determinants of health. That inequality in itself is a health hazard has become known as the Wilkinson (1996) hypothesis (6). So far, however, studies have shown conflicting empirical evidence of the Wilkinson hypothesis. Thus, this issue still has to be resolved by further research in the future. Sources: Deaton (7), Grootaert (8), Kahn et al (9), Lavis & Stoddart (10). emotions to keep this kind of capital intact. In order to get help from your network when you need it, you have to be prepared yourself to act towards the members of your network as you hope they will act towards you. Differences in perceived benefits and costs may explain why people differ in the investments they make in social networks. For instance, a married woman is typically younger and faces a lower mortality risk than her husband. Thus, she has a higher expectation than her husband of being widowed, and she can also expect
4 to remain a widow for longer. Her husband would typically have a shorter remaining life expectancy in the case of widowhood but also face greater prospects of remarriage. Thus, a woman has strong incentives to prepare herself for a single life as a widow and to allocate time and money to activities which, inter alia, involve investments in her social network. For a man, those incentives are much weaker, so he would typically invest less in keeping his social network capital intact and more in other goods and services that he prefers. He would, hence, typically benefit more than his wife from being married. On the other hand, he will also be less prepared for a single life as a widower. The impact on mortality of widowhood has been found to be significantly higher among widowers than among widows. Workplace Most adults of working age spend roughly one third of their day at work, and the workplace has an enormous impact on their health status. On the one hand, an unsafe and unhealthy working environment may, inter alia, involve exposure to accidents, noise and chemical hazards, ergonomic problems and stress. Furthermore, the psychosocial work environment may be related to other health conditions, such as heart disease and mental

illness, which do not fall directly into the sphere of the workplace. On II - 68 Learning to live with Health Economics the other hand, adults can be reached with health promotion activities, such as smoking control and exercise, at the workplace. It is also a site for building social networks. Most employers have incentives for investing in the health of their employees (to varying degrees) reflecting the fact that financial losses will accrue to the employer when an employee gets ill. These losses will arise because it is impossible to foresee exactly when someone will fall ill, which implies that an employee can only be replaced at a cost. The cost of replacement, including the cost of training, is high in industries which employ highly qualified and specialized employees. It also varies with the business cycle: the lower the unemployment rate, the harder it will be to find replacement workers. So, worksite health promotion may reduce health-related costs to the employer due to health insurance benefits, worker's compensation, disability, absenteeism and lower productivity. The extent to which an employer will have financial incentives for investing in the employees' health depends on the regulatory environment, which differs from one country to another. In Sweden, for instance, the law obliges employers to pay income compensation to employees during the first 14 days of their absenteeism, after which social insurance takes over the responsibility. There are proposals for extending the period during which the employer pays the compensation, thereby increasing the incentives for employers to invest in employees' health. No investments are without cost, of course, and the higher the risk that an employee will leave for another employer, the lower will the returns be on the health investment for the present employer. Physical environment The health of an individual depends on the availability and quality of food, water, air and shelter. Agricultural products are a prerequisite for health and wellbeing, but the development of bovine spongiform encephalopathy (BSE), for instance, has shown that food safety is also important for health. Microbial contamination of drinking-water causes outbreaks of acute gastrointestinal disease. Water may also be seriously contaminated by waste. In rural areas, the widespread use of pesticides and nitrates in agriculture has contaminated the groundwater. Water shortages are a major problem in some countries. Air pollution causes damage to lung function, respiratory illness and death from respiratory diseases. Allergies relating to air pollutants are also an important health problem. Homelessness and poor housing (lack of sanitation, damp, moulds, constructional deficiencies and unhealthy building materials) cause major health problems. Cheap and extensive transport facilities mean opportunities for people to meet other people and experience other cultures, and for goods to be exported to satisfy the demands of people in other countries. They also mean fast transport to hospital in case of health emergencies. At the same time, transport may be a health problem. Carbon dioxide emissions are already a health problem, as are noise and congestion. Moreover, road traffic accidents cause a heavy burden of personal injuries. To a large extent, the environmental effects on health are unavoidable for the individual, or at least only avoidable at a cost which is often rather high. Certainly, a person can move to another geographical area – although that would involve having to give up an established social network – but only if the individual and his or her family can afford it and can find jobs, housing, etc. Also, the negative externalities of the road traffic environment for an individual can be reduced by decreasing the number of journeys. On the whole, however, improving the physical environment requires collective action. Learning to live with Health Economics II- 69 Health care Health care is, of course, a key determinant of an individual's health, especially when he or she has been struck by disease and needs curative care rather than illness prevention or health promotion services. The efficient use of existing medical technology is essential for an optimal contribution to the individual's health capital. The importance of a well

functioning relationship between the health care workforce and users (including patients, unpaid carers and volunteers) for health improvements should, however, be observed in the context of this module. The health care workforce is the major input into the health care system, exceeding all other inputs combined in terms of expenditure. The education, training and experience of health care providers are critical factors underlying the processes by which health care is provided and for the actual outcomes which are achieved. The human capital of health care providers is a prerequisite for the health capital of individuals in society. Multisectoral responsibility for health The health of an individual is a product of heredity, his or her physical and social environments and capacity to make healthy choices, and chance. It is clear that actions pursued solely by the health care sector are not the only factors that affect health. Healthy lifestyles can only be promoted and healthy environments created if a large number of sectors are mobilized – not all of them mentioned above. An effective approach to health development requires all sectors to recognize the benefits of promoting health and to be accountable for the impact on health of their actions. Box 4. The contribution to health from the health care and other sectors If the overall objective is to maximize the health of the nation as some trade-off combination of the health status of all the inhabitants and the distribution of health among them, what is the relative contribution from each sector to this objective? This is an under-researched area. Furthermore, conditions differ among countries, so there is no definite answer for each and every country. However, even though their study is dated, the early contribution by Auster et al (11) may help to illustrate some important issues. These authors used states of the United States as their unit of observation when estimating the contribution to age- and sex-standardized mortality rates of a number of factors, including education, cigarette consumption and medical services. The estimated elasticities address several policy issues. First, the elasticity of medical services expenditure was approximately -0.1 and was statistically insignificant. This suggests that a 1% in expenditure on medical services would reduce mortality by 0.1%. Since the coefficient is not statistically significant, the possibility cannot be ruled out that the contribution from increased spending on medical services is zero. Second, the elasticity of education is somewhat larger, -0.2, and statistically significant. Taking the costs of increasing education levels into account, a marginal transfer of resources from medical services to education would be expected to improve population health in terms of lower mortality rates. Third, cigarette consumption per capita is associated with higher mortality rates. It should be noted that this lifestyle variable easily attains significant levels, while medical services do not. This should be taken as an illustrative example, not literally as a recommendation for policymaking in a specific country. The observations on which this study was
4
based are now 40 years old and many conditions have changed since then, including the development of high-tech medical care. For more recent studies see Wolfe (12) and Cremieux (13). Source: Auster et al (11). II - 70 Learning to live with Health Economics Questions for discussion 1. When is the social network beneficial to an individual's health? When is it detrimental? 2. Why may people differ in the investments they make in social networks? 3. What is meant by social capital? In what ways can it be beneficial to an individual's health? 4. What factors determine an employer's returns on investments in employees' health? 5. What are the roles of the individual, other family members, the employer, the health care system and society in general in determining an individual's health? What is the relative influence of different decision-makers when it comes to investments in individual health in your country? 6. Why can it be argued that improvements in the physical environment require more collective actions than improvements in most other areas affecting health? Individual health, public policy and population health Objectives of a policy for population health The health of a nation (population health) depends on the health of its inhabitants. It

has two aspects, which are reflected in the objectives of the WHO strategy for health for all: (i) to improve health for all individuals, and (ii) to decrease inequities in health between individuals (and countries). This strategy may take different forms, stressing one rather than the other objective, in different countries depending on cultural values and economic conditions. At one extreme would be making equity in health the sole objective, so that a worsening of other people's health would be accepted as long as the policy promoted equity. Such a policy would create enormous disincentives for everybody to invest in their own health, not just people with advantages. At the other extreme would be a situation where inequities were disregarded and all health gains valued equally no matter who received them. Most European countries have (generally more implicitly than explicitly) chosen some trade-off between the two policy objectives. No government seems to say that closing the health gaps should be achieved by promoting a worsening in health for their healthiest inhabitants. A measure of individual health In order to implement and evaluate the above policy objectives, a meaningful measure of individual health (and changes in individual health) must be available, and it must be possible to collect it at a relatively low cost. It must also be possible to aggregate this measure of individual health (and changes in health), giving varying weights to individuals who are more or less advantaged in terms of health. Measures of population health which are aggregates from the beginning, such as the mortality rate or life expectancy which are readily available at present in all countries, may be used (at least for some purposes) where the distribution of health is not of interest. For the individual, the mortality rate for the whole nation makes little sense, since his or her long-run probability of death equals one. Mortality rates relating to a smaller group are only slightly better, since almost everyone differs from the statistical average. The exception is infant mortality, since many characteristics of the individual have not yet been formed resulting in some degree of homogeneity. However, even in the case of infants, mortality rates reflect a rather extreme situation, providing very little information about health in terms of life expectancy and quality of life. Yet mortality rates are often used in empirical studies because they are easily available in official statistics and can be compared across regions and countries. Life expectancy is a better measure, particularly at time of birth. Quality-adjusted life expectancy (as well as gains and losses in quality-adjusted life years) would be a still better measure, suitable for all age groups. Learning to live with Health Economics II- 71 This is an important point for policy-makers, who have to make up their minds about the relative importance of the two objectives in their particular situations. Since policies in most cases will affect the two objectives differently, the policies which should be undertaken depend on the relative emphasis placed on the two objectives. The outcome will be influenced by the circumstances of the individual country, including its history, its level of economic and social development, its distribution of income, wealth and other resources relevant for health outcomes, and its values. In a world of scarce resources, no policies are without costs. It seems reasonable that those policies will be chosen which will maximize the national health objectives within some given budget, properly defined and subject to various other constraints. Population health and policies for economic growth Affluent societies are often healthier in terms of life expectancy. For example, richer countries can afford to improve the environment. Thus, economic growth is important for the health of nations and, in the long run, policies which improve conditions for economic growth are vital for all other types of health policy to be successful. Economic growth means that there are more goods and services to distribute among the population. Incomes can be raised for the least advantaged, employment can be kept at a high level, tensions in health care finance can be eased, housing conditions can be improved, education can be expanded and so on. Without economic growth, there will be fewer opportunities

for improving health. On the other hand, economic growth, or conditions which stimulate growth, may also create health problems. Moreover, people’s health is in itself a contributing factor to productivity and economic growth. Thus, the most successful policies would be those which deal with economic growth, human development and health in an integrated way. However, economic growth is a prerequisite for extending opportunities in many other areas than those which directly refer to health. Since the interrelationships between economic growth, the environment, health care and health were explored in the first chapter of these learning materials, the focus here is on the potential of more direct policies for population health. Policies for population health Different countries put different emphases on individual versus collective responsibilities for promoting the health of the population. At one extreme is the totally individual-centred society, in which only individual wellbeing counts and the distribution of health does not matter. At the other extreme, the totally collective society has definitive paternalistic views about individual health and the distribution of health among individuals. These are extremes. The historical circumstances and values of a society, its level of economic and social development and the distribution of income, wealth and other life chances are significant elements of the balance it chooses between individual-centred and collective approaches. Where collective approaches are supported, there is a range of policies that will affect the health of individuals and/or the distribution of health among them which governments can adopt. • Taxing goods and services (or reducing subsidies that support practices) that are harmful to health, e.g. tobacco products and alcohol. Even though these substances are addictive, people – even heavy consumers – react to price changes. The price elasticity of liquor seems to be the largest among alcoholic beverages (around (-)1), while the price elasticities of wine and beer are significantly lower, but definitely not 0. Since differences in price levels may distort competition and create cross-border shopping, such policies often stimulate coordination among countries. • Subsidizing certain goods and services which promote health, or providing them free, to disadvantaged individuals, especially where the disadvantage, if not addressed promptly, can become permanent or cumulative. • Regulation of private activities, in order to restrict some aspects and encourage others, e.g. in order to create a safer road traffic environment. • Direct public provision of goods and services, including information on healthy lifestyles and health risks. Overall, as has been identified by WHO, governments are in a unique position to address population health issues. They are charged with protecting the public good and have the legitimacy to act on behalf of the overall community. They possess legislative and regulatory powers and a comprehensive reach across the country and across the various sectors of the economy. They have some clear roles to play in promoting
4 health across the entire society, including the following. • They work to create links within the public sector between tiers of public administration and different government departments. The potential government contribution to health gains can be fully realized only if all tiers of government are willing and able to coordinate their activities. There is also a need for intersectoral action, involving a wide range of functional agencies, not just ministries of health. • They act to unlock resources that will reduce inequity in health. Not only inequalities in income and wealth, but also differentials in security, authority, and power can affect the distribution of health in society. • They collect and disseminate health information and use it to plan for the future. Routine monitoring allows for a tangible measure of the baseline position before an intervention and for the mapping of potential improvements in population health. This can be a powerful tool for persuading agents from different sectors to commit themselves to particular programmes. It also allows planners and policy-makers to analyse the existing context and to identify likely trends and paths of action. • They work with other sectors, including the voluntary and community sectors, to develop

cooperative partnerships. • They run campaigns and programmes that promote health and seek the voluntary support and compliance of organizations and individuals for these initiatives. • They legislate and regulate. WHO has argued that such measures should not be the main routes for implementing population health and the health for all approaches. Certainly, governments may want to see a greater sensitivity to health issues on the part of private companies. Advocacy, persuasion, popular pressure and the use of financial incentives are likely to be more effective ways of winning support. Where companies are not inclined to participate in voluntary schemes, despite such efforts, it may be necessary for governments to consider legislation and regulation to enforce compliance with environmental protection policies, occupational health and safety standards, provision of health information to facilitate consumer choice, etc. • They act responsibly as a major employer and as a significant economic player. The optimal mix of population health policies As emphasized above, the appropriate balance differs among countries depending on differences in their historical circumstances and values, their economic and social development, and the distribution of income, wealth and other life chances. However, all policy options have different outcomes, achieved at different costs. Thus, there is also a role for economic evaluation of available options in order to find the most cost-effective way of using scarce resources for the objective of maximizing population Learning to live with Health Economics II- 73 health. The module by Michael Drummond (5.3.1) provides the essentials of how to make economic evaluations of health programmes. Thus, economic analysis can help in setting priorities with regard to risk reduction and health promotion. It can provide information to assist choices concerning the optimal mix of population health policies among all the options open to society. Questions for discussion 1. Is there a trade-off between different approaches to aggregate, on a population basis, levels of individual health? If there is, what is the trade-off in your country? If not, what are the policy implications? 2. How could individual health be measured for routine purposes? 3. Consider the following opinion: “Lifestyle factors are major and statistically significant determinants of individual health, but changing lifestyles may not be the least costly way to improve population health status.” Try to explain under which circumstances this opinion could be true. Is it likely to be true in the real world? Taking the evidence on lifestyle factors into account, how should government health policies be designed? 4. What public policies contribute to the improvement of the health of individuals and the health of the overall population? To what extent are these objectives complementary and to what extent are they competitive? 5. How could economic evaluation of health programmes be helpful when setting priorities among all the health policy options that are open to society? Exercise The balance between individual and collective action (role-play) The balance between individual and collective action to achieve health gain is an important aspect of this module. Collectives refer to a wide range of social groups and organizations. The extent and focus of their interest in preserving or restoring health vary widely, as do the possibilities open to them and the impact of these. The balance between individual and collective participation varies among settings and societies, with differences in values playing an essential role. Compared to other goods and services, health care, for instance, tends to show an emphasis on collective action, but this is more obvious in relation to its financing than delivery. Individual approaches have both advantages and disadvantages, for example, greater freedom of choice and flexibility in organization, but may leave some individuals and groups in vulnerable positions. Collective approaches also have advantages and disadvantages, such as the possibilities for wider accessibility and greater equity, but can become unwieldy: the administration of large systems can become bureaucratic, user preferences may be ignored, and social problems may become medicalized. Historical traditions, social

expectations, the level of economic development and the distribution of resources also affect how these differences work out in particular countries and circumstances. Discuss (preferably through role-playing among participants from various groups) a particular case – a city with poor health status indicators, for instance – and prepare suggestions to improve the situation. Participants should be encouraged to bring out the possible contradictions and conflicts of interest of the actors, the values inherent in their views, and the historical and ideological factors which may be involved. References 1. FISHER, I. The nature of capital and income. London, MacMillan, 1906. 2. LINDGREN, B. The economic impact of musculoskeletal disorders. Acta orthopaedica Scandinavica, 69(Suppl. No. 281): 58–60 (1998). 3. BERGER, M.C. & LEIGH, J.P. Schooling, self-selection, and health. Journal of human resources, 24: 433–455 (1989). 4. FUCHS, V.R., ED. Economic aspects of health. Chicago, The University of Chicago Press, 1982. 5. GROSSMAN, M. The correlation between health and schooling. In: Terleckyj, N.E., ed. Household production and consumption. New York, Columbia Press for the National Bureau of Economic Research, 1975. 6. WILKINSON, R.G. Unhealthy societies: the afflictions of inequality. London, Routledge,1996. 7. DEATON, A. Relative deprivation, inequality, and mortality. Cambridge, MA, National Bureau of Economic Research, 2001 (NBER Working Paper 8099). 8. GROOTAERT, C. Social capital: the missing link? Washington DC, World Bank, 1998 (Social Capital Initiative Working Paper No. 3). 9. KAHN, R.S. ET AL. State income inequality, household income, and maternal mental and physical health: cross sectional national survey. British medical journal, 321: 1311–1315 (2000). 10. LAVIS, J.N. & STODDART, G.L. Social cohesion and health. Hamilton, Canada, McMaster University Centre for Health Economics and Policy Analysis, 1999 (Working Paper 99-09). 11. AUSTER, R. ET AL. The production of health: an exploratory study. Journal of human resources, 4: 411–436 (1969). 12. WOLFE, B.L. Health status and medical expenditures: is there a link? Social science and medicine, 22: 993–999 (1986). 13. CREMIEUX, P.Y. ET AL. Health care spending as determinants of health outcomes. Health economics, 8(7): 627–639 (1999). Further reading ARROW, K.J. Uncertainty and the welfare economics of medical care. American economic review, 53: 941–973 (1963). BARKER, D.J.P., ED. Fetal and infant origins of adult disease. London, British Medical Journal Publishing Group, 1992. BARKER, D.J.P. Mothers, babies, and disease in later life. London, British Medical Journal Publishing Group, 1994. BECKER, G.S. A treatise on the family. Cambridge, Harvard University Press, 1991. BECKER, G.S. & LEWIS, H.G. On the interaction between the quantity and quality of children. Journal of political economy, 81(2): 279–288 (1973). BERGSTROM, T. A survey of theories of the family. In: Rosenzweig, M.R. & Stark, O., ed. Handbook of population and family economics. 4 Amsterdam, North-Holland, 1997. BOLIN, K. ET AL. The family as the health producer – when spouses are Nash-bargainers. Journal of health economics, 20: 349–362 (2001). BOLIN, K. ET AL. The family as the health producer – when spouses act strategically. Lund, Lund University Centre for Health Economics, 2000 (Lund Economic Studies 31). BOLIN, K. ET AL. The family as the health producer – when employers have incentives for investing in the health of their employees. Lund, Lund University Centre for Health Economics, 2000 (Lund Economic Studies 34). BOLIN, K. ET AL. Investments in social capital. Implications of social interactions for the production of health. Lund, Lund University Centre for Health Economics, 2001 (Lund Economic Studies 37). CASE, A. & PAXSON, C. Mothers and others: who invests in children's health? Cambridge, MA, National Bureau of Economic Research, 2000 (NBER Working Paper 7691). CHATTERJI, P. & MARKOWITZ, S. The impact of maternal alcohol and illicit drug use on children's behavior problems: evidence from the children of the National Longitudinal Survey of Youth. Cambridge, MA, National Bureau of Economic Research, May 2000 (NBER

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warrant that the information contained in this publication is complete and correct and shall not be liable for any damages incurred as a result of its use. The views expressed by authors or editors do not necessarily represent the decisions or the stated policy of the World Health Organization. EUR/03/5042783 Contents
 Learning to live with Health Economics III- 1 3.1 Introduction Chapter 3 of the learning materials is concerned with the development of health systems, with particular reference to the WHO European Region and the areas where the modules are thought likely to be most useful. The modules address aspects of knowledge about the economic approach which are often lacking among the potential users of the learning materials. For example, they may lack basic knowledge about the criteria which are applied by economists in judging existing arrangements or proposals for change; about how economics can be applied in the special circumstances of health systems; or about the alternatives that are available, with their broad advantages and disadvantages. The modules also stress the variations which exist between different countries in the European Region as well as within them. They are primarily "thinking" modules and are organized into three parts. Section 3.2 discusses the two key criteria by which the development of health systems is judged by economists: equity, thought of as fairness, and efficiency. Section 3.3 is concerned with important aspects of the overall reform of health systems. The three modules in this part address the framework, or identity, which exists between expenditure, income and revenue and its implications; the evaluation of a range of available options for health care
4 reform in the circumstances of particular countries, particularly those of central and eastern Europe; and the structural, political, economic and social transformations that are occurring in those countries. Section 3.4 includes two modules on important specific issues: financing and privatization. Section 3.2 contains modules on equity and on efficiency, prepared by Professor John Lavis of McMaster University in Canada, the second one in collaboration with Professor Greg Stoddart. Module 3.2.1 presents a framework for thinking about how to distribute fairly the various available resources. This framework builds on three questions: are there aspects of health care which mean that it should be distributed differently from other goods and services? Does it matter who receives health care goods and services? Is it only the process chosen to distribute health care that has to be equitable or does the way in which health care is distributed matter as much (or even more)? The author emphasizes that there is no correct technical answer to a question about the fairness of a given distribution of resources – "values matter". He concludes that to distribute health-producing goods and services (or health) equitably means to distribute them: • in a way that

is acceptable, given the characteristics of the goods and services to be distributed; • in a way that is acceptable, given the characteristics of the recipients who will receive them; and • according to acceptable processes or criteria about acceptable outcomes of these processes. 3. Economics of health systems development III - 2 Learning to live with Health Economics The module emphasizes that what is acceptable in one jurisdiction may not be acceptable in another. Module 3.2.2 focuses on efficiency, which is central to health economics conceived of as the study of how scarce resources are allocated between alternative uses for the cure of sickness and the promotion, maintenance and improvement of health. Health care is distinguished from health and the even broader concept of wellbeing. The module considers the three main elements of efficiency: technical efficiency ("do not waste resources"), cost–effectiveness ("produce each output at least cost"), and allocative efficiency ("produce the types and amounts of output that people value most"). Of course, efficiency does not necessarily imply social desirability, since distribution of the costs and benefits can make an important difference to decision-makers. Thus, considerations of equity are often inextricably related to considerations of efficiency. Section 3.3 contains three modules, each written by a different author. These modules are all concerned with aspects of the reform of health care systems, but the approaches adopted and the detailed subject matter are very different. Together they raise a range of matters which are relevant to the reform of health care systems in the diverse countries of the WHO European Region. Module 3.3.1, written by Professor Greg Stoddart, is concerned with the identity that exists between expenditure, income and revenue (i.e. that they must be equal mathematically). The same national income–expenditure accounting principles which apply to other economic sectors also apply in the health sector. Thus every expenditure on health care is also an income to someone in the health care industry, and it must be financed through revenue of one type or another. Examining these three dimensions of proposed or actual health care reforms is often a useful aspect of health policy analysis. It can provide valuable insights on issues such as the redistributive income effects of policy changes, or the likely impact of such changes on the levels of expenditure and the real availability of health care services. The module describes a basic analytical tool of economics, the expenditure ≡ income ≡ revenue identity, and illustrates how it can be applied in the health care sector, especially in the context of health care reform. This tool enables skills to be developed in the appraisal and in the analysis of health policies and proposed changes. It can be extended to more complex relationships, can be used by a variety of audiences, and there is a wide range of possibilities for applying it to specific reforms. It can be used to record and understand changes retrospectively. It can also be used, perhaps even more importantly, to examine prospectively the likely consequences of health care reforms. Three illustrative examples are presented in the module. Module 3.3.2, by Dr Panos Kanavos and Dr Elias Mossialos of the London School of Economics and Political Science, considers health care reform by reference to the evaluation of available options in the circumstances of particular countries, including their previous experiences, their values and priorities, and their aspirations in relation to their resources. The authors consider the key factors which should be taken into account when various options for health care reform are being evaluated, including access, cost-containment and quality assurance. Secondly, they discuss the implications for the financing of health care reform once the objectives of the reform programme have been identified in a particular context. Thirdly, they outline four important factors to take into account in order to ensure that the reforms are implemented in an effective and sustainable way. Among other things they emphasize that the incentives inherent in the reforms, either explicit or implicit, should encourage desirable action by the main stakeholders, support

appropriate changes in attitudes as well as action, and promote the intended objectives over the longer term. Fourthly, they explain briefly how the development, dissemination and use of knowledge, and also monitoring, evaluation and (where necessary) modifications to health care policy and practice, can be harnessed to ensure that health care Learning to live with Health Economics III- 3 reforms are appropriate, evidence-based as far as possible, and adjusted appropriately as new knowledge becomes available. Obviously, health care reform in a particular country or region needs to be based on an extensive knowledge of the existing system, how it has developed and how it is operating in relation to the desirable objectives (including relevant intersectoral aspects). Thus, in the final part of their module, the authors consider the particular challenges of health care reform in the countries of central and eastern Europe, including the countries of the former Soviet Union. They illustrate, inter alia, the special difficulties that are encountered in seeking to implement health care reforms when the economy is shrinking rather than growing, and when society is suffering from considerable stress. Module 3.3.3, by Professor Yannis Yfantopoulos of the University of Athens, is different again. It focuses on the structural, political, economic, social and health transformations that are occurring in the countries of central and eastern Europe, and seeks to understand the major determinants which have influenced the changes in health status and health expenditure there following the fall of the Berlin Wall in 1989. This module is more econometric in its approach than the two previous modules and includes a case study concerning regional equity and efficiency in the Russian Federation. This module deals with changes in the overall systems operating in societies in transition over the period 1989–2000. These changes, for example from one political system to a new set of arrangements, or, in the economic sphere, from a planned economy to a system in which market forces play a larger role, went much further than just the health sector system, although they have had major consequences in that sector. The module considers the overall system adjustments in which particular changes (whether in health care or elsewhere) have occurred and in the context of which they have to be understood. It also shows how changes in the overall political and social arrangements in a given society are often more far-reaching than economic changes alone, let alone changes in the health care sector alone. The wider context needs to be borne in mind if specific changes are to be fully understood or proposals for reform most appropriately formulated and implemented. This is not to deny, of course, that decisions may be connected in a specific sequence and with related timing. Role-playing from the perspective of multiple stakeholders and with regard to the different circumstances of various societies (or time periods) can be a valuable method of articulating these differences, the possibilities for health care reform,

and alternative ways of achieving them. Thus, the three modules in Section 3.3 present different aspects of a complex reality in a stimulating way. However, they all draw on health economics approaches to illustrate a series of important problems relating to health care reform options facing the countries of the WHO European Region, with their diverse histories, values, circumstances and aspirations. Section 3.4 is concerned with two issues – financing and privatization – of particular importance in the development of health systems, and where health economists have a useful contribution to make. Module 3.4.1, written by Dr Panos Kanavos of the London School of Economics and Political Science, is concerned with financing. It highlights the relative merits of different methods of financing health services at the aggregate level, and discussing how different methods work and in what environments. Alternative arrangements for paying providers are analysed, together with the extent to which these encourage providers to achieve the broad objectives of health policy. The module also includes some discussion of how health resources and outputs/outcomes are distributed, the effect of particular incentives on the sustainability of change (particularly over the longer

term), and the wider impacts of the specific factors considered on the broader economy and society. Module 3.4.2, by Professor Greg Stoddart of McMaster University, provides an overview of some issues in privatization. He distinguishes several different economic functions in health care III - 4 Learning to live with Health Economics systems, each of which may have a different public/private mix, and cautions that privatization is only a means to previously agreed or specified goals. It is not an end in itself. Module 3.4.3, by Professor Anthony Culyer of the University of York, United Kingdom, in collaboration with Professor Richard Saltman of Emory University, USA, provides a case study of consultancy services on privatization in a central Asian republic. Countries in transition are well advised to consider carefully the options, prerequisites and likely outcomes of privatization. Learning to live with Health Economics III- 5 3.2.1 Equity in health1 John Lavis2 Key messages · Equity can be thought of as fairness. A framework for thinking about equity can help decisionmakers understand what fairness means on their jurisdictions. • A framework for thinking about how to distribute health care resources fairly builds on three questions: (i) Are there aspects of health care which mean that it should be distributed differently from other goods and services; for example, does health care have generalized or customized value? (ii) Does it matter who receives health care goods and services; for instance, can some individuals benefit from health care more than others? (iii) Is it only the process chosen to distribute health care that has to be equitable (e.g. markets versus queuing) or does the way health care is distributed matter as well or even more (e.g. individuals with greater health care needs receive more health care than those with fewer needs)? • To distribute health-producing goods and services equitably means to distribute them in a way that is acceptable given the characteristics of both the goods and services to be distributed and the recipients who will receive them, and in a manner that accords with acceptable processes or criteria about acceptable outcomes of these processes. What is acceptable in one jurisdiction may not be acceptable in another. 3.2 Criteria 1 Funding for the first version of this module was provided by the World Bank Institute as part of its Flagship Program on Health Sector Reform and Sustainable Financing. The Flagship Program was supported in part by the Canadian International Development Agency (CIDA). The first version of the module was written by Mita Giacomini and John Lavis. This second version of the educational module incorporates several modifications which enhance the module's applicability for the WHO Regional Office for Europe. Copyright (c) by the International Bank for Reconstruction and Development. The World Bank enjoys copyright to this material under protocol 2 of the Universal Copyright Convention. This material may nonetheless by copied for research, education or scholarly purposes only in member countries of the World Bank. The views and interpretations in this document are those of the authors and should not be attributed to the World Bank Institute or the World Bank. 2 This module was prepared by Professor John N. Lavis of the Centre for Health Economics and Policy Analysis, McMaster University, Canada (e-mail: lavisj@mcmaster.ca). III - 6 Learning to live with Health Economics Tutors' notes Module 3.2.1 considers the relationship between the WHO health for all strategy and health economics, with a particular focus on equity. Module 3.2.2 considers the relationship with a particular focus on efficiency. The first exercise in this module is aimed at the level of appreciation and can be used with the following groups: • policy-makers (e.g. elected officials) • civil servants and other government technical staff • health care managers • health care professionals (e.g. doctors and nurses). If the exercise is not relevant to participants' own settings, tutors can develop another one. The situation should involve pairs of goods and services that cut across most of the categories of goods and services. In the exercise, the first pair can be thought of as inputs, the second can be thought of as access to inputs, and the third pair can be thought of as

utilization of inputs. Each pair should involve a health care good or service with characteristics that would make decision-makers concerned with its fair distribution. To foreshadow issues raised later in the module, tutors can ask participants whether they would feel any different about people who love going to the theatre buying their way to the head of a queue for theatre tickets or people with triple-vessel coronary artery disease buying their way to the head of a queue for coronary artery bypass surgery. The second exercise is aimed at the level of (critical) appraisal. It can be used with the following groups: • policy-makers (e.g. elected officials) • civil servants and other government technical staff • health care managers. The exercise requires the group to focus on a particular policy – needs-based funding – and to appraise it critically. Participants are also asked to assess whether the policy would work in their own jurisdictions, so that they move beyond generalities to the difficulties of judging competing claims for resources. The third exercise in this module is aimed at the level of (critical) appraisal. It follows upon Exercise 2 and can be used with the same groups. The exercise requires the group to focus on fair endstates and to ask what are the relevant aspects of different regions' situations. The proposed budget allocation is based on population size and one measure of health status (life expectancy), both of which can be considered measures of need. Tutors can ask participants to suggest alternative measures of need. They can also ask participants if they think it is important to consider cost differences between regions. The conclusion provides a good jumping-off point for discussions about many important issues that could not be explored fully in a short module. For example, it raises issues such as how to make iterative movements towards greater equity, the need for balance between standardized measures of equity across societies and specific measures for specific societies at specific times, and the possibility that some decisions can bring a society closer to both efficiency and equity goals. Learning to live with Health Economics III- 7 Introduction HEALTH21 – an introduction to the health for all policy framework for the WHO European Region (1) opens with a thought-provoking question: is it healthy? This seems straightforward enough, but "it" means many things. In fact, the question is really a series of questions: • Are "the social and economic inequalities between groups" healthy? • Are "our children's starts in life" healthy? • Are "our living and working conditions" healthy? • Is "our physical environment" healthy? • Is "the way we pay for and deliver health care" healthy? And the list goes on. The document goes on as well, providing 21 targets for the Member States of the European Region which, if achieved, would move them towards a healthier twenty-first century. The document represents the WHO Regional Office for Europe's efforts to develop an inspirational framework that Member States can draw on when developing health for all (HFA) policies. Health economics might seem to be a curious thing to throw into this mix. As Module 4 3.2.2 will explore in more detail, health economics can be thought of as the discipline of health economics applied to the topics of health care and health. As such, health economics can help to make "better" decisions in general, by providing either new frameworks for thinking about issues or a collection of methods for analysing these issues. There are many courses in health economics that can achieve the very general objective of informing decision-making. For example, the Economic Development Institute at the World Bank makes available health economics course materials on-line. The WHO European Region has been developing learning modules in health economics for two reasons. First, many of the HFA targets and supporting information have been established, either implicitly or explicitly, using frameworks and tools from health economics. Understanding these frameworks and tools will therefore help to understand HFA targets. For example, the notion of efficiency in producing health pervades much of the document. By understanding that efficiency means "getting the most out of scarce resources" and that health can be thought of as the "output" of a production process involving health care and other "inputs" such as our living and

working conditions, decision-makers can begin to see that there are cheaper or more expensive ways of achieving a given level of health status. Why waste resources? Second, many of these targets require frameworks and tools from health economics for their implementation. For example, one of the targets involves establishing multisectoral responsibility for health and suggests health impact assessments as a strategy for implementing this target. Translated into everyday language, this means that employers, the heads of housing agencies, ministers of finance and many other individuals are being called on to think about the health consequences of their decisions (i.e. they are being called on to ask "are they healthy?"). This represents a major change in thinking for health officials (who will face individuals who routinely invoke economic concepts to make decisions and justify them) and for individuals in other sectors (who will routinely have to use tools from health economics such as health impact assessment). This module and Module 3.2.2 provide background material for learning about health economics in the context of the health for all strategy . Two core concepts provide the backbone of many of the frameworks and tools of health economics. The first concept, efficiency, will be covered in Module III - 8 Learning to live with Health Economics 3.2.2. Efficiency can be thought of as getting the most out of scarce resources, a notion implicit in much of WHO's strategy for health for all and related targets. Considering that the overarching goal of HEALTH21 is to achieve full health potential for all, an ambitious goal if ever there was one, the concept of efficiency has to be at the forefront of decision-makers' minds. Sometimes getting the most out of scarce resources will require a focus on policies with explicit health objectives, such as policies related to the health care system. Several HFA targets address the health care system. Target 17, for example, covers financial arrangements: a funding system should foster universal coverage, solidarity and sustainability, and sufficient financial resources should be allocated to priority health needs. Targets 3 and 6 cover some of the types of health care service that should be provided: reproductive and child health services, and services for people with mental health problems. At other times, getting the most out of scarce resources will require a focus on policies with health consequences, not health objectives (i.e. on broader determinants of health, not just health care). A number of HFA targets address the broader determinants of health. Targets 6 and 10, for example, cover aspects of the social and physical environment – working conditions and pollution levels – that have been found to be important health determinants. Labour market policies that can affect working conditions and business regulations that can affect pollution levels often do not have health as an explicit objective. Other HFA targets address specific policy domains that have important health consequences as well. Target 5, for example, covers housing, income and other measures that can enhance autonomy, social productivity and health. These targets have presumably been selected in part using the concept of getting the most out of scarce resources. Advocating the allocation of resources to reproductive and child health services, for example, rather than to health services for the care of a specific set of chronic diseases, suggests that some people believed that this allocation would "buy" more health for all. But Member States still have to decide how many resources should go to priority health needs and how many resources should go to some of the determinants of these health needs, such as working conditions or housing. These types of decision may require intersectoral decision-making processes. But getting the most out of scarce resources is not the only concept used to select these targets. In fact, unlike most documents, HEALTH21 is refreshingly frank about the values that form its ethical foundation. One of the three values is "equity in health and solidarity in action between and within all countries and their inhabitants" (emphasis added). Moreover, many of the 21 HFA targets have an equity dimension to them. For example, Target 2 involves the reduction of

social and economic inequities between groups through policies, legislation and action. The remainder of this module surveys basic concepts of equity and discusses how they might affect economic decision-making for health. It draws on material produced by the author and Mita Giacomini as part of a larger project (2). Equity can be thought of as fairness. This concept is sometimes covered as an afterthought when health economic concepts are introduced. The rationale for this can be traced to the primary concern of health economics: finding the most efficient allocation of health resources to achieve a given policy goal (e.g. to help individuals get well when they are sick or to help populations remain healthy). But efficiency is not the only criterion for judging the distribution of resources. Equity represents another criterion and since it forms an important part of the ethical foundation of HEALTH21, the module introduces a framework for thinking about equity before introducing other frameworks and tools from health economics. Learning to live with Health Economics III- 9 A framework for thinking about equity can help decision-makers to understand what they and other groups mean when they say they want to be “fair”. For example, many jurisdictions have formal mandates requiring that health care be distributed equitably (3). But what does equitably mean in this instance? More specifically: • are there features of health care which mean that it should be distributed it differently from other goods and services; • does it matter who receives health care goods and services; and • is it only the process chosen to distribute health care that has to be equitable or does the way health care is distributed matter as well or even more? As these questions suggest, there is no technical answer to a question about the fairness of a given distribution of resources. Values matter. These three questions are used here as the basis of a framework for thinking about equity. The three questions all focus on health care, but they can be generalized to any good or service that contributes to health. To distribute health-producing goods and services equitably means to distribute them: in a way that is acceptable given the characteristics of the goods and services to be distributed, in a way that is acceptable given the characteristics of the recipients who will receive them, and according to acceptable processes or criteria about acceptable outcomes of these processes. Each of these three principles will be addressed in turn. Characteristics of goods and services that may affect their fair distribution Health-related goods and services can be divided into categories (4). A list of categories specific to health care is as follows: (i) health care insurance; (ii) health care inputs: • providers • programmes and services; (iii) access to health care insurance and health care (iv) utilization of health care: • use of health care services (or “utilization”) • use of effective health care services (“met needs”); (v) benefits generated by (i)–(iv) above: • specific health benefits (health) • general benefits (wellbeing). Each category depends to some extent on the categories that precede it. Health 4 benefits can accrue from the use of effective health care services. Health care utilization can depend in turn upon access to health care insurance. The pyramid nature of this listing, with each category building on the foundation established by the previous category, is only approximate. Access to health care insurance does not necessarily ensure use of effective health care services, which in turn does not necessarily ensure an improvement in wellbeing. Also, both health and wellbeing depend upon resources besides health care, such as housing and income. This list can be augmented to include other health-producing goods and services, but we will focus here on health care goods and services. III - 10 Learning to live with Health Economics Decision-makers ideally seek a fair distribution of the “highest” element on this list: an acceptable level of health and wellbeing shared by members of the jurisdiction to which they are accountable. In fact, two of the three basic values that form the ethical foundation of HEALTH21 endorse this view: that “health is a fundamental human right”, and “equity in health ... between and within all countries and their inhabitants”. Of course, health and wellbeing are not goods and services that a decision-maker (such as a

government official) can distribute directly. A decision-maker can, however, often have direct control over health care insurance and over health care inputs that can produce health (such as providers, programmes and services). In addition, decision-makers can often influence individual behaviour and thereby influence access to and the utilization of health care services. To pursue the target of equity in health (Target 2), decision-makers therefore typically seek a fair distribution of health care inputs and encourage appropriate access to and utilization of healthproducing goods and services. That is, decision-makers typically focus on allocating the “lower” elements on the list of categories in the hope of influencing the “higher” elements (health and wellbeing). To monitor success in achieving Target 2, decision-makers ideally will examine not only the distribution of health-producing goods and services and the rates of their use (5), but also the resulting distribution of the “higher” elements, such as health and wellbeing. Now what is it about health-producing goods and services that may affect their fair distribution and lead decision-makers to intervene in their distribution? Consider the following pairs of goods and services: • a television and a kidney dialysis machine; • an art exhibit in a private gallery in the nation’s capital and a CAT (computed axial tomography) scan service available at every hospital; • watching a theatrical performance and undergoing a coronary artery bypass procedure. We might accept certain processes for the distribution of the first item in each of these pairs (such as market exchange) and certain criteria for acceptable outcomes of these processes (such as inequality in the distribution of these goods and services in accordance with people’s ability-to-pay and willingness-to-pay). At the same time, we might be very uncomfortable using the same processes or the same criteria for acceptable outcomes for the second item in each of these pairs. Entertainmentrelated goods and services are typically seen in a very different light from health-producing goods and services; the first part of the framework for thinking about equity can help in understanding why. Three characteristics of a good or service may affect its equitable or fair distribution: • its physical nature; • the degree to which it possesses customized as compared to generalized value across the citizens of a given jurisdiction; and • prevailing cultural beliefs about a good or service and acceptable processes for its distribution or criteria about acceptable outcomes of these distribution processes. The fairness of a given distribution of the goods and services listed above can be examined with regard to each of these three characteristics. Physical nature of the good or service The physical nature of a good, in particular its divisibility and its scarcity, will affect how it can be distributed (6,7). Regarding divisibility, some health care inputs can be divided; others cannot. A hospital, for example, is a capital-intensive type of input which cannot be divided and which cannot be distributed uniformly over a large geographical area and without regard to where the majority of potential users of the hospital live and work. Examining the distribution of hospitals (as an input) by geographic area therefore makes little sense. Instead, decision-makers could examine the distribution of access to hospital-based programmes and services and/or the distribution of the goods (e.g. private cars and fuel) and services (such as buses) required for access to hospitals. Human resources in health care, on the other hand, are an input which can be divided into individual health care providers such as physicians and nurses. Health care providers, especially those who provide primary care, can be distributed in a meaningful way over a geographical region. Finally, moving from health care inputs to the benefits generated by these inputs, it is impossible to distribute health benefits meaningfully across a population. Genetic endowments, for example, are such that there are physical limits to the equal distribution of these benefits. Scarcity can also influence how fairly goods and services can be distributed. In many countries, inputs such as kidney dialysis machines are scarce resources because both their purchase price in the local

currency and the operating costs related to technical staff and materials are high. Other resources are naturally scarce, for example human tissues (such as blood) and organs (such as hearts). Where the need for a health-producing good or service such as kidney dialysis is greater than its supply, decisionmakers often rely on one of the other two equity principles. As discussed in the next two parts of this module, such principles could include the characteristics of the potential recipients (e.g. providing kidney dialysis to young rather than old people), or acceptable processes (e.g. using waiting lists or lotteries) and criteria about acceptable outcomes of these processes (e.g. people with end-stage kidney disease are all treated the same, even if this means that no one receives kidney dialysis). Generalized compared to customized value Some goods and services have roughly the same value to everyone (generalized value); others have different values for different people (customized value) (7). A television, for example, might offer something for everyone and therefore have roughly the same value for everyone. An art exhibit or theatrical performance, on the other hand, may be highly sought after by some and less highly sought after by others. Access to health care can be thought of as a good or service with generalized value. The knowledge that health-producing goods and services will be available in case of need is presumably highly valued by everyone. The use of these services, on the other hand, has customized value. Using a kidney dialysis machine represents a “met need” if an individual has end-stage kidney disease. Similarly, having a CAT scan of the head has customized value for an individual who has recently become paralysed for no apparent reason; and undergoing a coronary artery bypass procedure has customized value for an individual with severe triple-vessel heart disease. Neither the CAT scan nor the bypass procedure has much value for a healthy individual. Note that value need not be restricted to the person receiving the good or service. Immunization against a communicable disease benefits both the individual who receives it and the individuals with whom that individual comes into contact. Cultural beliefs The citizens of one jurisdiction may have a strong cultural belief that a particular good or service should be distributed in one manner, while the citizens of another jurisdiction may believe that the same good or service should be distributed in another manner (6,8–10). Many governments have defined an essential health care service package of which they would ensure the fair distribution across their jurisdiction (11–14), leaving discretionary services to the private market. Which services III - 12 Learning to live with Health Economics are considered essential and which discretionary, however, varies with the values of the decisionmakers in a given jurisdiction. The essential package endorsed by the World Bank contains five types of services prenatal and delivery care, family planning, management of the sick child, tuberculosis treatment, and management of sexually transmitted diseases (14).
4 Moving from inputs to access, many European jurisdictions value universal access to health care insurance, in part as a symbol of national solidarity. Other jurisdictions (such as the United States) feel a stronger ideological commitment to competitive markets than to universal access to health care insurance (15). Moreover, some jurisdictions feel that the removal or lowering of financial barriers to access is only part of the answer. Decision-makers and citizens in these jurisdictions believe that additional barriers such as language, education deficits and getting time off work must also be addressed. Exercise 1 Consider again the following pairs of goods and services: • a television and a kidney dialysis machine; • an art exhibit in a private gallery in the nation’s capital and a CAT scan service available at every hospital; • watching a theatrical performance and undergoing a coronary artery bypass procedure. First, match each pair with one of the following categories of goods and services: inputs, access to inputs, utilization of inputs, benefits generated by the utilization of these inputs. Second, describe which characteristics of each good or service in a pair means that it is more likely that decision-makers will be concerned with the fair distribution of the

health-related goods and services rather than the entertainment-related goods and services. Characteristics of potential recipients that might justify their claims to particular goods and services In the case of some goods and services, individuals or groups may argue that they have a claim to a greater proportion of resources than others. What characteristics of potential recipients could justify this claim – membership of a group, past contribution to society, need for health care? Typically, when an answer is sought to these questions, potential recipients are thought of as groups or populations rather than as individuals. Decisions about how to distribute resources across different groups will depend upon decision-makers' commitments to them. Consider the following example: an administrator of a local health authority wants to close one of the two hospitals in a small community to get the most out of scarce resources. One hospital serves one religious group and, in keeping with religious custom, provides care to men and women in separate sections of the hospital; the other hospital serves another religious group. Activists from both religious groups argue that both hospitals must remain open. This example illustrates how group membership can, and often is, used to justify a claim to particular goods or services. Groups can be defined socially (e.g. by membership of community organizations or by religious affiliation), economically (wealthy or poor), demographically (gender, age or race), geographically (urban or rural), intergenerationally (current or future generations), or along other dimensions. The meaning and legitimacy of a particular group division is best understood within a particular social Learning to live with Health Economics III- 13 context, because cultural beliefs about historical entitlements or injustices will vary across social contexts. Group-based equity analysis can be used to advance social justice, but it can also be used to advance prejudicial discrimination. The latter may conflict with international human rights principles, for example, that health is a fundamental human right. Now consider another example: a government cannot afford to pay for the drugs to treat all the people infected with the human immunodeficiency virus (HIV) that causes AIDS. Some people argue that infected health care workers should be given priority because they make a critically important contribution to society. Others argue that managers and professionals should be given priority, because society has made an important investment in their education and training and they have made and could continue to make an important contribution to society. Both arguments are based on contributions to society – past, present or future – which economists call a human capital criterion. Using the contribution to society as a characteristic to justify claims for health-producing goods and services raises two problems (16). First, health and social productivity are interrelated: it is more difficult for sick people to make a contribution to society, so preferential treatment of the productive often means preferential treatment of the healthy. Second, historical patterns of discrimination can mean that certain groups of people (such as women or ethnic minorities) will consistently appear less productive in measurable terms (e.g. taxable earnings, intellectual contributions). Now consider a final example: in a war zone or other extreme situation where medical personnel and supplies are very scarce, medics often cannot treat everyone. They simply do not have the time and supplies to do the job. These medics make a triage of the injured on the basis of the severity of their injuries and the likelihood that they will benefit from emergency medical attention. The same approach is typically taken in less extreme situations. Health care providers make a triage of the population on the basis of their ability to benefit from health care, that is on the basis of their need for health care. Need represents a third characteristic of potential recipients that might, and often does, justify their claims to particular goods and services. Need may be measured in different ways, depending upon the good or service to be distributed. For example, if the good is access to health care insurance or health care, then need may be defined in part

by degree of poverty. If the good is health care utilization, then need would ideally be defined by ability to benefit from health care. Unfortunately, such information is rarely available. Therefore, analyses of equity commonly compare the distribution of health-producing goods and services across groups that, on average, have known relative needs for health care. For example, all groups can benefit from immunization so immunization rates should be similar across all groups if people were immunized according to need. However, it has been found that residents of urban regions in Peru have been immunized at roughly four times the rates of rural residents for poliomyelitis and other diseases (17), suggesting that people were not immunized according to need in that jurisdiction at that time. As another example, not all groups can benefit from asthma drugs and urban populations may have higher rates of asthma, because of poorer air quality, and therefore they may have higher needs for asthma drugs. In this case, a higher rate in an urban region may suggest that asthma drugs are distributed according to need. Exercise 2 Many jurisdictions distribute the money for health care on the basis of historical patterns of use. More money is distributed to regions with more hospitals and more health care providers, without explicit regard to the relative size or health of the local populations. In an effort to improve the equity or III - 14 Learning to live with Health Economics fairness of publicly financed health care systems, some jurisdictions have introduced needs-based funding for health care. According to this approach, money is distributed to local health authorities based on population size and population health indicators (i.e. the larger or sicker the local population, the more money its local health authority would receive to spend on health care goods and services). Consider the following questions: (i) What “good” is being distributed by needs-based funding? (ii) Who is receiving the good? (iii) Within each local jurisdiction, how might local health policy-makers ensure that services will be distributed according to need? (iv) Would needs-based funding work in your own jurisdiction? Fair process or fair end-states The third part of the framework involves how resources are distributed (i.e. the fairness of processes) and the acceptability of the resulting distributions (i.e. the fairness of end-states). Equity objectives such as those articulated in HEALTH21 can be defined in terms of fair processes, fair end-states, or both. Fair process approach The fair process approach holds that fair processes will necessarily distribute resources fairly. This approach can be particularly helpful in two situations: first, when the good or service cannot be distributed to all those with a claim on it (so each individual may be provided with a fair chance to obtain the good or service, perhaps leaving others with none of it); and second, when informational problems preclude the valid assessment of the final distribution of a good or service, making end-state judgements impossible. Market exchange, ideally conducted in a perfect market, is one process that could be used to distribute resources (18). Most people believe that this process distributes resources equitably only if: (i) transactions are completely voluntary; (ii) people have full information about the consequences of their transactions; and (iii) there are no substantial starting differences in people’s wealth (which would influence their ability-to-pay and willingness-to-pay for health care goods and services). In practice, these conditions are rarely satisfied in markets for health care goods or services. A second process that could be used to distribute resources is a lottery. Although seldom used in clinical practice, lotteries do underlie the randomized controlled trials used in clinical research. Lotteries are seen by some as a fair way to distribute an indivisible and scarce good, because they give each potential recipient an equal chance of receiving the good or service. Because the process is blind to the characteristics of recipients – everyone has the same probability of winning regardless of who they are – there can be no unfair discrimination. Lotteries are not common, however, in part because people do not always want an equal chance. Instead, people often want a fair chance that reflects what they see as their legitimate claim to the good (6). That is, they are seeking fair

4

discrimination. Queuing represents a third process (7). Queuing in health care can be based on a number of characteristics of potential recipients. For example, in some jurisdictions the time since the need for a good or service was determined (i.e. time in the queue) and degree of need for the good or service (i.e. clinical severity) are used to establish the recipient's position in the queue for coronary artery bypass surgery and hip replacements. Learning to live with Health Economics III- 15 Governance and decision-making processes represent a fourth category. For example, democratic processes may be used to involve the general public in broad policy decisions such as the types of goods and services that should be paid for in publicly financed health care systems. Alternatively, contracting processes may be used when a small number of decision-makers act on behalf of a larger group (19–21). Such processes require that decision-makers specify a distribution of goods as if they have no idea what situation they might find themselves in after the goods and services have been allocated. Simply put, a decision-maker must make a decision guided by the notion that "there but for the grace of God go I." This approach tends (to some extent) to minimize harm to whomever will be made worst off. A limited health care service package for the poor in the American state of Oregon, for example, has been criticized on the grounds that the poor were not adequately involved in the decisions, and that the decision-makers (state employees) might not agree to such a limited package for themselves (through state employee health insurance) (22,23). Moral duty may conflict with other fair processes, as well as with efficiency (24). Moral duty (i.e. the imperative to do the right thing in a given situation) is a principle upon which health professionals place great emphasis (25). In particular, clinicians' ethical duties to rescue individuals in danger can result in the redirection of large amounts of resources into intensive or emergency care. To the extent that a jurisdiction recognizes this particular moral duty as fair, it may accept the resulting distribution as fair. The fair end-state approach The fair end-state approach adopts a very different viewpoint. Here the concern is not with the process of distribution, but with where resources actually end up (i.e. the end-state distribution). Equality represents one possible fair end-state distribution. A strictly equal distribution of a health care budget across regions may, for example, turn out to be quite unfair to the citizens of some regions. Many local health authorities might argue that the citizens of their regions have legitimate claims to more goods and services. For example, these citizens may be sicker or poorer than the citizens of other regions and so they may have a legitimate claim to more resources for health care. It may be necessary to make an unequal distribution of a health care budget based on population size, needs for goods and services, and the costs of providing those goods and services, in order to provide equal access to goods and services for the inhabitants of each region. Hence, although they are closely related, equality is not the same as equity. Another possible fair end-state distribution involves equals being treated equally and unequals being treated unequally according to their degree of inequality, an idea of formal justice first articulated by Aristotle (26). In economics, the term horizontal equity refers to the distribution of equal amounts of a good among recipients who are similarly situated according to relevant aspects of their situations. Hence, a funding formula may seek to ensure that regions with similar needs and costs receive equal shares of the budget. In contrast, vertical equity refers to the distribution of unequal amounts among differently situated recipients in proportion to the degree to which they are differently situated. Hence, a funding formula may also seek to ensure that regions with greater health care needs and costs receive a greater share of the budget. III - 16 Learning to live with Health Economics Exercise 3 Imagine that you are the chief executive officer for a local health authority in your country. You receive a letter from the minister of health informing you that the central government has

decided to move from basing budget allocations on past allocations (i.e. historical patterns of health care use) to basing them on health care needs. The government has decided to use population size and life expectancy as measures of health care need. Your region has received a budget allocation of 100 million currency units. This amount is 20 million current units less than you received last year. The letter provides the following comparative information about the budget allocations for all regions in the country (Table 1). Table 1. Comparative budget allocations in a country Region Population size Life Budget allocation (your region) expectancy (currency units) A 500 000 67.5 100 million B 250 000 70.0 45 million C 1 500 000 65.0 320 million D 5 000 000 67.5 1 000 million E 500 000 67.5 100 million Has the central government addressed both horizontal and vertical equity? What aspects of your region's situation would you bring to the attention of government if you wanted to argue that your budget allocation is not equitable? Conclusion To distribute health-producing goods and services (or health) equitably means to distribute them: • in a way that is acceptable given the characteristics of the goods and services to be distributed; • in a way that is acceptable given the characteristics of the recipients who will receive them; and • according to acceptable processes or criteria about acceptable outcomes of these processes. What is acceptable in one jurisdiction may not be acceptable in another. Distributional decisions are made every day, every month and every year in health-producing sectors. If these decisions and their outcomes are tracked, it is possible to learn about what types of decision bring us closer to where we want to be. Many decisions will bring us closer to both our efficiency and equity goals. At other times, one goal will be sacrificed at the expense of the other, at least to some degree. Many jurisdictions will share an interest in tracking similar outcomes, such as equity in utilization of health care services by socioeconomic status. Other jurisdictions may have a particular interest in health differentials between aboriginal and non-aboriginal children. The important steps are, however, shared: establish equity goals, measure the extent to which these goals are achieved, and revise the goals or the approach as necessary. Learning to live with Health Economics III- 17

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value their gains enough to, in principle, be able to compensate those who lose for the value of their losses, thereby leaving the losers as well off as before the change. • The general requirement for allocative efficiency is that each activity or output should be pursued only until the extra benefits from pursuing it just equal the extra costs. Under some very specific conditions, this requirement can be met through a system of prices and markets. In the case of health care, these conditions are often violated. • Efficiency does not necessarily imply social desirability. As outlined in Module 3.2.1, who wins and who loses may make an important difference to decision-makers. The measurement of fairness (equity) is therefore often inextricably related to the measurement of efficiency. Tutors' notes The core exercise in this module is aimed at the level of (critical) appraisal of core economic concepts. It can be used with the following groups: • civil servants and other government technical staff • health care managers • health care professionals (e.g. doctors and nurses). 3 Funding for the first version of this module was provided by the World Bank Institute as part of its Flagship Program on Health Sector Reform and Sustainable Financing. The Flagship Program was supported in part by the Canadian International Development Agency (CIDA). This second version of the module incorporates several modifications which enhance the module's applicability for the WHO Regional Office for Europe. 4 This module was prepared by Professor John Lavis (e-mail: lavisj@mcmaster.ca) and Professor Greg Stoddart (email: stoddart@mcmaster.ca), Centre for Health Economics and Policy Analysis, McMaster University, Canada. The first exercise in this module requires the group to focus on a particular policy proposal. If the proposal is not relevant to the participants' own settings, tutors can develop another one. The proposal should contain examples of technical inefficiency (e.g. the provision of ineffective medical procedures or excessive staffing levels), cost-ineffectiveness (e.g. a mix of providers skewed towards more expensive ones relative to what they produce, say physicians, and away from less expensive ones, say nurses), and allocative inefficiency (e.g. some of the types of service that people value most are not provided). The second exercise is aimed at the level of appreciation and can be used with the following groups: • policy-makers (e.g. elected officials) • civil servants and other government technical staff • health care managers. It will be of most interest to those individuals with broader responsibilities for health care and health, including officials in ministries other than health, such as finance. Again, if the situation is not relevant to participants' own settings, tutors can develop another one. The situation should involve moving from a production-related notion of efficiency (cost–effectiveness) to a consumption-related element of efficiency (allocative efficiency). It should also involve moving from traditional inputs into the production of health (hospital-based services) to non-traditional inputs such as those outlined in Fig. 1. The third exercise is aimed at the level of appreciation and can be used with the following groups: • policy-makers (e.g. elected officials) • civil servants and other government technical staff. This exercise requires the group to focus on a situation that involves an externality but in which a price system may allow for a stable allocation of resources such that marginal social cost equals marginal social benefit, and that these in turn equal both marginal private cost and marginal private benefit. Introduction Different groups in any society speak different languages and dialects. Economists have developed a language of their own as well. Sometimes they share this language with non-economists. The word "scarce", for example, means the same to almost

everyone. At other times economists use a term from everyday language to mean something very specific in their own language. "Efficiency", for example, means something very specific to economists. In fact, economists believe that there are three types of efficiency. This module is primarily concerned with key concepts in health economics. It is secondarily concerned with introducing the language of economists (i.e. the terms that economists use when referring to these concepts). In defining and providing examples of these key concepts, we draw heavily on two documents that we have previously written (1,2). We begin with the big picture. Economics is the study of how individuals and societies choose to allocate scarce productive resources among competing alternative uses and to distribute the "products" from these uses among the members of a society. Health care and health are universally seen as two important products to Learning to live with Health Economics III- 21 which all societies commit resources. Health economics can be thought of as the discipline of economics applied to the topics of health care and health (3 pp.1–13,4). More specifically, health economics is the study of how scarce resources are allocated among alternative uses for the care of sickness and the promotion, maintenance and improvement of health. It further includes the study of how health care and health-related services, their costs and benefits, and health itself are distributed among individuals and groups in society. The term "resources" means the basic inputs to production: the time and abilities of individuals; land and other natural resources such as water; facilities, equipment and other types of capital; and knowledge of production processes. Money, although an important medium of exchange and a very useful measuring device, is not defined by economists as a resource in itself. The importance of financial budgets, for example, stems from the command over resources which they confer upon those who control the budgets. A fundamental problem facing all societies – and the reason that economics exists as an area of study – is that resources are scarce. Scarcity means that there are not, and can never be, enough resources to satisfy all human wants and needs. This observation is acutely clear every day when it comes to matters of illness and health, but it is equally true of other areas of human activity. There exists a constant conflict between alternative uses of resources, and a constant need to choose among alternative allocations. Therefore, economists define the real cost of an activity (such as hospital services) as the other outputs that must be given up (for example, other health services such as immunizations, non-health services such as defence, or commodities such as cars) because resources are committed to it. Economists refer to this important basic concept as the opportunity cost. Decision-makers in all societies face decisions about trade-offs on a daily basis. For example, a request from a hospital doctor to begin providing magnetic resonance imaging (MRI) scans for the 20 patients each year who are suspected of having multiple sclerosis could virtually preclude all other new initiatives at a hospital that does not own and operate an MRI scanner already. In some jurisdictions the same amount of money could pay for a 10% reduction in the post-operative infection rate if disposable needles were consistently available for use and instrument sterilization machines were purchased. Trade-offs can also be considered across sectors. For example, in the 1990–1991 fiscal year, the government of the Canadian province of Ontario granted a US $350 million budget increase for hospital services. A public health researcher pointed out that these funds could have been used to provide 70 000 publicly subsidized housing units for low-income families or 547 000 publicly subsidized day-care places for children, both of which he considered to be alternative investments in health (5). Both the request to introduce an MRI scanner at a hospital and the decision to increase hospital budgets have high opportunity costs. Two fundamental characteristics of economic analysis follow from the concept of opportunity cost. First, economics is concerned with evaluating and choosing among alternative

courses of action, whether or not they are explicitly identified. Second, in doing so it examines both the costs and consequences of the alternatives. Efficiency The primary criterion that economics uses to organize and conduct these analyses is that of efficiency. The basic concept of efficiency, as the word is understood in common usage by almost everyone, is quite simple: to get the most out of scarce resources. But beyond this intuitive advice it is not always III - 22 Learning to live with Health Economics clear what this involves, or how to achieve it, and – a word of warning at the outset – economists attach a very precise set of meanings to the concept of efficiency. Some of these meanings may not be obvious, agreed to or understood by everyone (6,7). Before considering these meanings in more detail, it is worth pausing to reflect on the magnitude of the resource allocation problem facing societies once the implications of resource scarcity, competing uses for resources, and conflicting needs and wants are taken into account. This is illustrated in Fig. 1 with particular reference to the role of health care and health. Fig. 1 shows how resources can be used in alternative ways to "produce" health care services, health and general wellbeing. The concept of efficiency and its meanings discussed below can be applied to each of these (2). Because efficiency is an instrumental concept, it is always necessary to specify clearly the outcome being sought or the output being produced. (A more detailed discussion of these "outputs" is contained later in the module.) In Fig. 1 resources can be used for a variety of purposes, divided here into three groups labelled Health care services, Other determinants of health, and Other determinants of wellbeing. Health care services contribute to general wellbeing through their effect on health, as do other determinants of health such as education, income security programmes and safe workplaces. These other determinants of health may also have a direct effect on general wellbeing. The third category, other determinants of Fig. 1. The magnitude of a society's resource allocation problem Consumer products Transportation Defence Education Income security programmes Safe workplaces Primary care Hospital services Pharmaceuticals Resources Consumer products Transportation Defence Education Income security programmes Safe workplaces Other determinants of health Health services Primary care Hospital services Pharmaceuticals Other Other Other Health Other determinants of wellbeing General wellbeing Learning to live with Health Economics III- 23 wellbeing, in general has only direct effects on wellbeing, although there may be some consumer products – food, for example – that can affect wellbeing indirectly through an effect on health as well. The three main elements of efficiency (3,8) may be summarized in everyday language as follows: • do not waste resources • produce each output at least cost • produce the types and amounts of output that people value most. An efficient allocation of resources is one that simultaneously meets all three of these requirements. The first two requirements relate only to production; the third introduces consumption, thereby bringing together the supply and demand sides. The first element of efficiency above requires that for any given amount of output the amount of inputs used to produce it is minimized. (The requirement may also be stated such that maximum output is produced from any given combination of inputs.) If this condition is not met, then it is possible either to obtain more output through a different configuration of resources, or to release some of the resources to alternative uses without sacrificing any current output. This element of efficiency is termed "technical efficiency". Hospitals that are larger than they need to be to serve their communities are an example of technical inefficiency. In general, there will be several technically efficient combinations of inputs (for example, combinations of labour and capital) for a given level of output. The second element of efficiency builds on technical efficiency but takes into account the relative cost of different inputs. It requires that, in addition to technical efficiency being attained, inputs be combined so as to minimize the cost of any given output. (Alternatively, the requirement may be stated such that output is maximized for a given cost.) For example, if labour is

abundant and inexpensive relative to capital in one economy compared to another, then least-cost production methods will employ relatively more labour in the first economy. This element of efficiency is termed “cost–effectiveness”.5 Although the cost-effective way of producing an output can vary from setting to setting, for any given output in a particular setting there will normally be only one combination of inputs that will be costeffective. (It is only possible to claim that a specific combination of inputs is cost-effective in producing a particular output if it has been compared to one or more alternative combinations of inputs used for the same purpose.) Note also that, while cost–effectiveness can inform the question of how to produce an output at least cost, it does not address the question of whether the output should be produced. If something is not worth doing, it’s not worth doing well! The third element of efficiency links the supply of outputs to the demand for them by extending the analysis to consider the preferences and values of the members of society who consume the outputs. It requires that, in addition to achieving technical efficiency and cost–effectiveness, resources be used to produce the types and amounts of outputs which best satisfy people, i.e. which people value most highly. The term used by economists to describe this all-encompassing concept of efficiency is “allocative efficiency”. It is possible for an allocation of resources to be both technically efficient and cost-effective but allocatively inefficient, if producers are supplying too much or too little of a good or service relative to consumers’ wishes. For example, if patients who have had heart surgery want counselling services for lifestyle modification instead of organized exercise classes, then allocative efficiency might be improved by changing the mix of secondary prevention services even if the exercise programme was being provided cost-effectively. 5 The authors of economics texts do not always make the distinction between technical efficiency and cost–effectiveness. Some use the term technical efficiency to include both concepts (9). III - 24 Learning to live with Health Economics In common language, then, efficiency means both “doing things in the right way” (technical efficiency and cost–effectiveness), and “doing the right things” (allocative efficiency). To take health care services as an example, there is no single, correct, international solution for their efficient provision. Although all countries in theory have access to the same production knowledge, the relative cost of different inputs (e.g. nurses versus doctors, drugs versus hospital days) varies across countries, and consumers in different countries have different preferences and values. Therefore, it is possible (indeed expected) that countries will differ in how they provide services, which services they provide and to whom they are provided, independently of any differences in efficiency which may exist. Exercise 1 Consider one of the four main strategies for action in HEALTH21 (10): to develop “integrated familyand community-oriented primary health care, supported by a flexible and responsive hospital system”. Imagine that your country already has the beginnings of a national network of primary health care centres. Before you are willing to consider expanding this network as part of your country’s commitment to the health for all strategy, you want to be certain that the existing centres are operating efficiently. The following information has been collected: • some medical services provided in the centres have not been found to be effective; • staffing levels of physicians and nurses are high relative to anticipated levels of communities’ needs for primary care (in fact, physicians and nurses are idle for extended periods of the day); • physicians perform routine services such as immunizations and well-child check-ups that nurses could perform to the same level of quality (and physicians are paid considerably more than nurses); • some communities with existing centres have reported that families feel there are too few (and sometimes no) reproductive and child health services to give their children a healthy start in life (as recommended in Target 3) and that there are too few quality services for people with mental health problems (as recommended

in Target 6), even though they would prefer these services to some others that are currently provided. Use the three elements of efficiency (technical efficiency, cost–effectiveness, and allocative efficiency) to examine the proposal more closely, paying particular attention to how each observation relates to one of the three elements of efficiency. Now consider how you would develop “integrated family- and community-oriented primary health care ...” in your country and what information you would need to inform your decision. By necessity, statements about allocative efficiency involve value judgements about which criteria will be used to judge whether a particular resource allocation “best satisfies” people, or is the “most highly valued”, or gives “too much or too little” of some goods and services. The standard criterion in economics comes from a branch of economic theory known as welfare economics. The criterion is known as the Pareto criterion (named after a nineteenth century sociologist and economist, Vilfredo Pareto), and states that allocative efficiency has been attained when it is not possible to change the allocation of resources to make any one person better off without making at least one other person worse off (11). There are at least two other important characteristics of efficiency based on Paretian criteria (3,11). First, such a notion of efficiency is centred on the individual: social “welfare” is assumed to be Learning to live with Health Economics III- 25 a function only of individual welfare, each individual is assumed to be the best judge of his or her gains and losses, and individual welfare is assumed to depend only on the goods and services the individual consumes. In the real world, all of these assumptions are problematic. People care about the welfare of each other, their social groups and their communities. Individuals must often make decisions on behalf of others. And even when they only consider themselves, people care about other things than just the goods and services that they consume, such as the characteristics of the societies in which they live. Second, the efficient outcomes realized under this concept of efficiency depend very much on the distribution of income and wealth among individuals in the society. In other words, under the Pareto criterion there is no unique allocation of resources that is the (one and only) efficient allocation. Rather there is a set of efficient allocations, one for every different distribution of income and wealth. In practice, this difficulty can be avoided by accepting the existing distribution of income and wealth, although this is a very important value judgement that should be (but seldom is) made explicit in discussions of efficiency. These characteristics of the standard economic approach to allocative efficiency mean that it may be possible for a society to prefer an “inefficient” (in a Paretian sense) resource allocation to an “efficient” one if, for example, the members of society judge it to be fairer in some way (3,7,12). A policy change that removed public subsidies for private hospitals in favour of expanding free public clinics might be an example of this. Another way to state this is that the choice 4 among several allocatively efficient resource allocations must be made on the basis of criteria other than efficiency (9). The usefulness of the Pareto criterion is very limited in practice, because most changes in resource allocations do in fact make some people worse off. That is, for almost any policy, there are both gainers and losers. In an attempt to extend the scope of the criterion, it has been proposed by some economists that a sufficient condition for viewing a change in resource allocation as an improvement in (allocative) efficiency is that those who gain from the change value their gains enough to, in principle, be able to compensate the losers for the value of their losses, thereby leaving the losers as well off as before the change (11). This “potential Pareto” criterion does not require that the compensation actually be paid, which many observers, including some economists, find ethically unacceptable (6,7,13). For example, suppose a policy of user fees improved access for the wealthy but reduced access for the poor. If the gains to the wealthy were sufficiently large to be able to compensate the poor, the potential Pareto criterion would deem this policy efficient, even if the rich do not in fact compensate the poor for their reduced access.

Nevertheless, it is this potential Pareto criterion for allocative efficiency which is the basis for the economist's measurement technique of cost–benefit analysis, one of the techniques described in Module 5.3.1 on methods of economic evaluation. Allocative efficiency as defined above does not necessarily imply social desirability, except under a very specific and controversial value judgement. Specifically, unless compensatory policies are implemented, allocative efficiency implies social desirability only if ability-to-pay and willingnessto-pay are considered appropriate criteria on which to base access to goods and services. That is, allocative efficiency implies social desirability if the existing distribution of income and wealth, which facilitates purchases and consumption, is considered acceptable. Because value judgements and ethical principles are such an important part of the criteria for allocative efficiency in the real world of policymakers, the measurement of equity or fairness is often inextricably involved in the measurement of efficiency. Equity considerations were discussed in Module 3.2.1. III - 26 Learning to live with Health Economics An application of efficiency concepts With the three efficiency concepts now clear, these concepts are applied to the production of health care, health and wellbeing – three potential outputs of HEALTH21 policy. Two of the four main strategies for action in HEALTH21 involve health care services: primary health care, supported by a flexible and responsive hospital system (as mentioned above), and "health outcome-driven programmes and investments for ... clinical care." Parts of the latter strategy, as well as the other two strategies, involve things other than health care. One might therefore ask "Can we have too much health care?" Elsewhere we have addressed this question (2) and parts of that answer are repeated here because it demonstrates how technical efficiency, cost–effectiveness and allocative efficiency can be applied to the outputs of health care, health and wellbeing. In Fig. 2, a simple framework is provided to answer the question "Can we have too much health care?" The rows of the framework ask the questions: "Is production technically efficient?", "Is production cost-effective?" and "Is production allocatively efficient?" The columns itemize what is being produced: health care, health and wellbeing. Some of the eight resulting cells are combined to generate six ways in which there can be too much health care: (i) health care that is not effective (ii) effective health care that is more costly than it need be (iii) health that is more costly than it need be (iv) health care that is valued at less than its cost (v) health that is valued at less than its cost (vi) wellbeing that is more costly than it need be. Health care that is not effective. If health care is not doing what it is supposed to do (i.e. restore, maintain or improve health) then the resources devoted to it are wasted. Some programmes or services may actually harm patients or do more harm than good. Others may be ineffective. It may also be the case that an otherwise effective service is rendered ineffective because it is applied in the wrong clinical circumstances (i.e. when it is not clinically warranted). For example, although coronary artery bypass surgery can dramatically improve the length and quality of life for selected patients, it would have no effect (and may even be harmful) in patients who do not have a type or severity of heart disease for which coronary artery bypass grafting has been found to be effective. Fig. 2. A taxonomy of ways in which too many resources can be devoted to health care What is being produced? Is production efficient? Health care Health Wellbeing Technical 2 1 6 Cost-effective 3 Allocative 4 5 Source: Lavis & Stoddart (2). Learning to live with Health Economics III- 27 Effective health care that is more costly than it need be. Health care becomes costly when the same quantity of services could be produced with fewer inputs (i.e. with fewer personnel, less equipment or less know-how) or with lower expenditure (i.e. with less expensive personnel, equipment or knowhow compared to more expensive ones). As examples of the latter, consider the possibility of substituting nurse-practitioners for physicians in many routine clinical encounters or the possibility

of providing more non-acute care outside hospitals, i.e. in nursing homes or ambulatory care facilities. By the same reasoning, health care becomes costly when more services could be provided with the same number of inputs or with the same level of expenditure. Health that is more costly than it need be. If a specific level of health could be produced by reducing expenditure on some types of health care relative to others or by spending less on health care and more on other contributors to health (such as those outlined in Fig. 1), then too many resources may be devoted to health care. Coronary artery bypass surgery when applied to the right patients, for example, can buy more years of life than the same amount of money spent on monitoring low-risk patients in coronary care units (14). In addition, the early initiation of prenatal care (a health care intervention) and supplemental food programmes (an intervention traditionally considered to be outside the health care sector) can both reduce infant mortality rates more cheaply than neonatal intensive care units (15). Monitoring low-risk patients in coronary care units and neonatal intensive care units may therefore produce health in more costly ways than necessary. Health care that is valued at less than its cost; and health that is valued at less than its cost. The fourth and fifth ways in which too many resources can be devoted to health care move us beyond the production (supply) side of the economic ledger to the consumption (demand) side. Here the focus is on benefits as well as costs. The benefits of health care (as determined by those receiving or paying for health care) must be valued in relation to its costs (i.e. other things foregone), and it may be that some types of health care are not valued as highly as other outputs that could have been produced. Similarly, the benefits of health must be valued in relation to its costs. In other words, it may be possible to improve the mix of different types of health (both quality of life and length of life, for example) or the mix of health compared to other things (such as consumer goods, education, security and justice). Wellbeing that is more costly than it need be. Just as health care is only one determinant of health, so health is only one determinant of wellbeing. Wellbeing can be produced in more and less costly ways. If overall wellbeing could be increased by "less" health (produced by health care) and correspondingly more of the other contributing factors, then too many resources are being devoted to health care. Exercise 2 In your role as the ministry of health official charged with implementing the 21 targets from HEALTH21, you are visited by the head of the medical staff of the largest hospital in your country. He is lobbying for a new programme to expand lung transplantation facilities. He shows you several clinical research studies – all well done, randomized controlled clinical trials – which demonstrate the cost–effectiveness of a new transplantation technique compared to the old technique and to maximally intensive medical therapy. His claim is that, because he has "proof" of cost–effectiveness, it is
4 obvious that his initiative should be funded without further delay. How would you reply? The head of the medical staff is not satisfied by your reply. He in turn replies that you should at least agree that additional funding be given to his hospital because you are responsible for ensuring "health for all"; then he and others at the hospital will work out which programme inside the hospital III - 28 Learning to live with Health Economics should get increased resources. Other programmes within his hospital will therefore be able to compete with the transplantation programme. What is your reply now? The margin The general conditions for allocative efficiency under the potential Pareto criterion can be described in a technical way, using the economist's concept of the "margin". Economists define the "marginal cost" of an output as the additional cost incurred in producing the last (or next) unit of that output. Similarly, the "marginal benefit" is the additional benefit obtained by consuming the last (or next) unit of an output. In an efficient world, marginal cost and marginal benefit are equal for each output, although they may vary across outputs. For example, if a hospital wishes to expand its diagnostic imaging programme, a consideration of allocative

efficiency requires that it not be expanded past the point where the extra resources required (personnel, space, supplies and equipment) would create more benefit if used instead in another of the hospital's programmes. Individuals use a similar rule every day in deciding how to allocate their time and money. Individually, we constantly make judgements about whether the extra benefit of doing something (e.g. buying another belt, drinking more coffee, visiting relatives more often) is worth the extra cost involved. We tend to stop doing things when the extra costs exceed the extra benefits. So, too, for societies pursuing their health care activities and health goals. For allocative efficiency, each activity or output should be pursued or produced only until the extra benefits from pursuing or producing it just equal the extra costs. In other words, the value of the extra benefit that individuals and societies derive from the last unit of any output consumed is just equal to the opportunity cost of the resources (i.e. their value in their next best use) used up by producers to create that unit of output. Of course, this is a difficult determination to make in practice. An important contribution of economic theory has been the demonstration that this requirement can be satisfied (i.e. for each good or service produced, the marginal social cost equals the marginal social benefit), and a stable allocation of resources can be identified through a system of prices and markets. This solution to the economic problems of what goods and services to produce (and in what quantities), how to produce them, and how to distribute them applies only under some very specific conditions, however (as outlined towards the end of Module 3.2.1). When these conditions are violated, markets are said to fail in that they do not lead to an allocatively efficient distribution of resources. As mentioned previously, unless compensatory policies are implemented, a system of prices and markets implicitly accepts two value judgements. The first is that both ability-to-pay and willingness-to-pay are appropriate criteria on which to base access to goods and services, while the second is that the existing distribution of income and wealth is acceptable. In the case of health care, market failure is common (16) and the above two value judgements are frequently rejected for certain categories of service. Exercise 3 In your role as minister of health, you have a meeting with the minister of the environment to discuss water quality. You point to Fig. 1 and make the case that the quality of the physical environment is an example of the category of "other determinants of health". You believe that firms are making decisions to minimize their production costs at the expense of the physical environment in general, and water quality in particular, by dumping effluent into rivers and streams. You want the minister of the environment to do something. The economic adviser to the minister of the environment replies that the problem has two parts. First, at the level of the firm, the extra benefits of disposing effluent in this way far exceed the extra costs. At a social level, however, the reverse is the case. The minister of the environment argues for a price system that would sell pollution rights as the simultaneous solution to both problems. As minister of health, do you see this proposed solution as an efficient one? References 1. HURLEY, J. ET AL. Introduction to the concepts and analytic tools of health sector reform and sustainable financing: a pre-course distance-learning module (http://www.worldbank.org/ healthreform/class/module1/index.htm). Washington (DC), World Bank, 1998 (accessed 6 November 2002). 2. LAVIS, J.N. & STODDART, G.L. Can we have too much health care? Daedalus: journal of the American Academy of Arts and Sciences, 123: 43–60 (1994). 3. CULYER, A.J. Economics. Oxford, Basil Blackwell Ltd., 1985. 4. WILLIAMS, A. One economist's view of social medicine. Epidemiological community health, 33: 3–7 (1979). 5. LABONTE, R. Health care spending as a risk to health. Canadian journal of public health, 81: 251–252 (1990). 6. REINHARDT, U.E. Reflections on the meaning of efficiency: can efficiency be separated from equity? Yale law and policy review,

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Further reading EVANS, R.G. Strained mercy: the economics of Canadian health care. Toronto, Butterworths, 1984. FOLLAND, S. ET AL. The economics of health and health care, 2nd ed. Upper Saddle River, NJ, Prentice Hall, 1997. HURLEY, J. Welfarism, extra-welfarism and evaluative economic analysis in the health sector. In: Barer, M. et al., ed. Health, health care and health economics: perspectives on distribution. New York, John Wiley and Sons, 1998, pp. 373–395. LEE, K. & MILLS, A. The economics of health in developing countries. New York, Oxford University Press, 1983. MOONEY, G.H. Economics, medicine and health care. New York, Harvester Wheatsheaf, 1986. MOONEY, G. Economics, communitarianism and health care. In: Barer, M. et al., ed. Health, health care and health economics: perspectives on distribution. New York, NY, John Wiley and Sons, 1998, pp. 397–413. PHELPS, C.E. Health economics. New York, NY, HarperCollins, 1992. RICE, T. The desirability of market-based health reforms: a reconsideration of economic theory. In: Barer, M. et al., ed. Health, health care and health economics: perspectives on distribution. New York, NY, John Wiley and Sons, 1998, pp. 415–463. RICE, T. The economics of health reconsidered. Chicago, Health Administration Press, 1998. 3.3.1 The expenditure ≡ income ≡ revenue framework (identity) Greg Stoddart6 Key messages • The same national income–expenditure accounting principles that apply to other economic sectors also apply to the health sector. • Every item of expenditure on health care is also an income to someone in the health care industry, and it must be financed somehow through revenue of one type or another. • Examining these three dimensions of proposed
4 or actual health care reforms is often a useful aspect of health policy analysis. It can provide important insights on issues such as the redistributive income effects of policy changes, or the likely impact of such changes on the levels of expenditure and the real availability of health care services. Tutors' notes This module describes a basic analytical tool of economics, the expenditure ≡ income ≡ revenue framework or identity, and its application to the health care sector, especially in the context of health care reform. As such, it is intended to develop skills in appraisal and analysis of health policies. The identity can be used by a variety of audiences. Indeed, stripped of its algebra or symbols and reduced to its basic idea (key message 2), it can be appreciated by even the least experienced audiences, including members of the general public. Perhaps those most involved in debates over health care reform (politicians, ministry of health officials, and leaders of health care institutions or professional associations) will find it most useful and relevant. There is a wide range of possibilities for applying the identity to specific reforms. The key thing in Exercise 1, for example, is to ensure that the participant attempts to trace the effects of his or her chosen reform in all three

parts of the framework. Another source for reforms to be analysed using the framework is European health care reform: analysis of current strategies (1). 3.3 Overall reform 6 This module was prepared by Professor Greg Stoddart, Centre for Health Economics and Policy Analysis, McMaster University, Hamilton, Ontario, Canada (e-mail: stoddart@mcmaster.ca). III - 32 Learning to live with Health Economics Introduction Few subjects generate as much debate as health care reform. This seems to be the case in all countries and, although the debate may follow a cyclical pattern in any one country, significant debate over health care reform appears to be a constant feature of the international scene. The debates are frequently intense, and claims or counter-claims in one country often have spillover effects, prompting similar debates in other countries. One reason for the ongoing debates is that the stakes are perceived to be high, in several dimensions. Perhaps the one of most concern to the average person is that of health. If health care systems are not organized, financed and managed to deliver effective services at the right time and in an efficient and compassionate manner, the basic needs of individuals will go unmet. Governments must also consider other dimensions such as the level of expenditure on health care versus other spending priorities and how to finance public expenditure, as well as the extent to which they can (or should) rely on private financing. Governments must also consider carefully the political consequences of their health care policy decisions. Few issues will mobilize opposition constituencies as quickly as a perception of neglect or poor management of health care. Health care providers too have a direct economic stake in health care policy. After all, expenditure on the health care “industry”, whether public or private, is also the income of those who work in the industry. It is not a coincidence that health care providers are everywhere at the forefront of lobbying efforts to fight controls on health care costs or to expand the provision of health services. The economic issues involved in health care reform are complex, and cannot be condensed into one module. The purpose of this module is to provide a relatively simple economic framework which draws on the observations above and some concepts of economic theory in order to assist participants to begin to analyse and understand some of the most frequent policy debates in health care reform. It continues the emphasis in this series of WHO Regional Office for Europe learning materials on providing participants with analytical and conceptual tools for health policy analysis. The module begins by presenting and explaining the analytical framework. Next, examples of typical health care reforms are briefly discussed in order to illustrate the use of the framework and, in particular, its ability to clarify issues regarding the distributional effects of health care reforms. The module concludes with an exercise for participants to apply the framework to health care reform in the contexts of their own countries. The expenditure ≡ income ≡ revenue identity (framework) Evans (2–4) outlines a useful analytical framework for the economics of health care reform based on national income–expenditure accounting principles (which apply to all economic sectors). He emphasizes that every expenditure on health care is also an income to someone in the health care industry, and must be financed somehow through revenues of one type or another. Thus, there exists the following expenditure º income º revenue framework (Fig. 1). The relationship is an identity, which means that the three items must be equal mathematically. Learning to live with Health Economics III- 33 Fig. 1. The expenditure ≡ income ≡ revenue framework (identity) Total EXPENDITURE Total INCOME earned Total REVENUE raised on health care ≡ from the provision of health ≡ to pay for health care goods and services care goods and services goods and services Each of the three individual items can be separated further into its basic components as follows: EXPENDITURE = P x Q Where P is the unit price and Q the quantity of each type of health care good or service. INCOME = W x Z Where W is the rate of payment per unit of input and Z represents the various types of input or resource

that are combined to produce the health care goods or services. REVENUE = TF + SI + UC + PI Where TF is taxation, SI is social insurance contributions, UC is direct charges to users and PI is private insurance premiums. These are the three main channels through which revenue may be raised to finance the provision of health care goods and services. The identity may therefore be written in symbols as follows:7 P x Q ≡ W x Z ≡ TF + SI + UC + PI Using the identity Although simple, the identity is quite a powerful analytical tool. For example: · If total health care expenditure (P ´ Q) increases, then it must be possible to trace the corresponding effects in the income and revenue items. For income, either the amount of inputs (Z) has increased, or the rate of payment per unit of input has increased, or some combination of both has occurred. This must be the case, or the identity will not balance. · For revenue, either taxes (general taxes or social insurance premiums) have increased, direct charges to users have increased, private insurance premiums have increased, or some combination of the three effects has occurred if total health care expenditure has increased. Again, this must be the case, or the identity will not balance. The definition of what constitutes a health care good or service will vary from country to country. However, in principle Q is a list (vector) of all of a country's health care goods and services, including hospital, medical, pharmaceutical, ambulance, dental and laboratory services. There is, therefore, a long list of types of health care goods and services under the symbol Q, and a corresponding long list of their unit prices under the symbol P. Note that non-marketed services, such as care provided by family members in the home, are typically not included, although technically they could be. To include them would require measurement of the quantities of services and time spent by family members, followed by imputation of values for the prices of services, the wages of family caregivers, and the out-of-pocket contributions by users' families. Similarly, under the symbol Z, there is a long list of individuals who derive their incomes from the provision of health care goods and services. The obvious ones are health care providers such as physicians, nurses, dentists or physiotherapists. Another group includes the non-clinical employees of 7 This presentation uses symbols for convenience, but they are not required. Some users of the learning materials may be more comfortable with an entirely verbal treatment. Other participants may prefer an algebraic treatment, which can be found in (2). III - 34 Learning to live with Health Economics health care firms, such as the administrative and support staff of hospitals, clinics and government agencies. But the symbol Z includes all individuals who derive income from the provision of health care goods and services. Therefore it includes other, less obvious individuals such as the employees, shareholders, lawyers and accountants of private insurance firms, pharmaceutical firms, medical equipment suppliers and for-profit managed care firms. In other words, the symbol Z includes not just the health care providers, but also the individuals deriving incomes from the management and overhead components of health care systems. Consequently, under the symbol W there is a corresponding long list of rates of payment per unit of input for each type of individual. The revenue item in the identity could also be expanded in detail. Under the symbol TF would be a list of all types of taxes (personal income, corporate income, sales, excise, payroll, etc.); under the symbol SI would appear social insurance premiums; under the symbol UC would appear the various types of direct charge (deductibles, coinsurance, per-service fees, etc.); and under the symbol PI the different premiums would appear for any types of private insurance which existed. The picture can be made quite complex, but the basic point is simple. Any change in one of the three items in the expenditure º income º revenue identity of necessity implies a change in the other two. To take a simple example, suppose that the only change that occurs is that a nurses' union successfully negotiates a wage increase with its governmental employer in a publicly-financed hospital system. Then W increases and, if the same number of nurses remain employed, then both the expenditure

item (P ´ Q) and the revenue item (TF + SI + UC + PI) must increase. If there is no change in the amount of hospital services supplied (Q), then there has in effect been an increase in the unit price (P) of hospital services. If there is no change in the mix of public and private financing, and no increase in direct charges to users, then government must raise taxes or social insurance premiums in order to pay for the wage increase if it wishes to avoid creating or adding to a fiscal deficit. Extensions to the identity Several more complex extensions can be made to the identity (2). Evans introduces four types of additional relationship: (i) a health production function linking the output of health care goods and services (Q) to the health status of members of the population; (ii) a health care production function linking the output of health care goods and services (Q) to the levels of inputs and resources (Z); (iii) a demand relationship linking the level of direct charges paid by users (C) to the level of health care utilization (Q); (iv) a capacity relationship linking the levels of health care goods and services provided (Q) to a maximum available stock of inputs and resources. Participants interested in more advanced analyses may wish to study the articles by Evans (2,3). Although reference may be made to some of the concepts in (i)–(iv) above, for the purposes of this module the basic framework of the identity will be sufficient. Retrospective use of the identity The identity can be used to record and understand retrospectively the changes that have occurred in a country's level of total health care expenditure and to investigate, for example: Learning to live with Health Economics III- 35 • whether changes in expenditure levels were primarily the result of changes in the level of utilization of services or changes in the cost of the services; • how changes in the reimbursement of health care providers have affected overall expenditure and, in particular, the availability and utilization of services; • how changes in the supply of health care providers have affected their remuneration, overall expenditure, the availability and utilization of services, and fiscal pressure on government; • the effects of increasing direct charges to users on utilization of services and the incomes of health care providers; and • the effects of introducing or reducing reliance on social insurance as a financing mechanism. Prospective use of the identity Perhaps an even more important use of the framework, however, is to examine prospectively the likely consequences of health care reform. Three examples are discussed below concerning the control of health care expenditure in a publicly financed system, real or perceived shortages of physicians, and pharmaceuticals, respectively. The framework could also be used to analyse the implications of greater privatization of health care financing, a topic which is discussed in the next module (on the evaluation of health care reform options). Controlling or reducing the rate of growth of health care expenditure is an important policy objective for many governments. Since expenditure on hospital services typically represents the largest single component of total health care expenditure, attention often focuses on it. Consider first the case of a government committed to reducing total expenditure by reducing hospital expenditure. One of the most frequent strategies for accomplishing this objective is to reduce the number of hospital beds in operation, with the goal of forcing the more efficient use of the remaining beds and possibly increasing the amount of care provided in the community or on an outpatient basis. In terms of the expenditure ≡ income ≡ revenue identity, the main effect of the policy is to decrease that portion of Q devoted to inpatient hospital care and thereby decrease the item P ´ Q. (There may be a small increase in the portion of Q devoted to hospital-based outpatient care, but this must be less than offsetting if the goal of reducing overall expenditure is to be achieved.) Achievement of the goal also means that TF decreases, assuming that the hospitals are only financed through taxation. But what about the income item in the identity? Assuming that policies that would lower W, such as lower rates of remuneration, job-sharing or reduced hours of work for, for example, physicians, nurses or hospital support staff, are not

introduced, then unemployed hospital workers are the anticipated result, as Z decreases and balance is maintained in the identity. In practice, both W and Z may decrease to maintain the identity. The policy therefore not only has an effect on the public budget, it also redistributes the incomes of health care workers. Real or perceived shortages of physicians are another policy "crisis" which frequently arises in health care systems. Consider a government committed to "holding the line" on total health care expenditure (i.e. holding the item P ´ Q, and presumably also TF + SI + UC + PI, constant) but feeling politically constrained to do something about the shortage of physicians. If it increases the number of doctors, Z increases and so will P ´ Q and the need for revenue. One option might be to increase the supply of physicians but simultaneously reform their remuneration so that W is lowered, although this will generally be a difficult strategy to implement. Another option might be for the authorities to embark on a longer-term strategy to reduce reliance on physicians by increasing the use of family health nurses or nurse-practitioners. In this case, the eventual goal is to decrease that portion of Z III - 36 Learning to live with Health Economics representing physicians, while increasing it for physician substitutes. But as the identity makes clear, the payment rate for these substitutes will have to be carefully structured so that the item W × Z for physicians and their substitutes does not increase overall. In recent years, the increase in the cost and use of pharmaceuticals has been one of the driving forces behind increased health care expenditure. (The effectiveness of the utilization of pharmaceuticals is a major issue requiring attention, although that is not the issue being addressed in this example.) In terms of the identity, the shares of both P and Q representing pharmaceuticals have been increasing, with accompanying increases in the shares of both W and Z for individuals associated with the pharmaceutical industry, including executives and shareholders in multinational corporations. To the extent that payment or insurance for pharmaceuticals remains largely outside the publiclyfinanced health care system in many countries, this means that either UC or PI, or both, have been increasing. They may continue to do so given the cost-control record of the private sector of health care systems. (It also has the interesting effect of making a health care system look more "private" over time as expenditure on pharmaceuticals becomes a larger share of total health care expenditure. This occurs even though no structural changes to the system or the boundaries between public and private services have occurred.) For a government that is holding the line on total health care expenditure while paying publicly for all or most pharmaceutical use, recent experience shows that there is an implicit reallocation occurring among different types of Q – more of pharmaceuticals and less of other types of health care goods and services – unless the unit prices (P) of the other services can be lowered. It is possible to imagine
4 cost-reducing efficiencies being instituted for other types of service (e.g. hospital care) that lower their Ps, thereby leaving overall P ´ Q constant in the face of rising P and Q for pharmaceuticals. However, in practice this is both difficult and unlikely. Accompanying the reallocation among types of service will be a reallocation of incomes away from the providers of non-pharmaceutical services, involving decreases in (some combination of) W and Z, and towards the providers of pharmaceutical services. Exercise 1 Identify and describe at least one health care reform which is currently being proposed or considered in your country. Discuss what effect you think it will have on total health care expenditure, and give the reasons for your view. Then trace the possible implications of the reform in each of the income and revenue items of the identity. Exercise 2 Compare and contrast the implications of the expenditure º income º revenue identity in a contracting economy, where the resources available for health care are declining, with those in a growing economy. For example, what are likely to be the similarities and differences in terms of the redistributive income effects of policy changes, their likely impact on the levels of health care expenditure, and the real

availability of health care services? Also, consider the similarities and differences from the point of view of the four separate groups of users of these learning materials: national or regional policy-makers; managers of health facilities or services; health care practitioners and consumers; and people with an interest in, concern for and perhaps involvement with the health sector. Learning to live with Health Economics III- 37 References 1. SALTMAN, R.B. & FIGUERAS, J., ED. European health care reform: analysis of current strategies. Copenhagen, WHO Regional Office for Europe, 1997 (ISBN 92 890 1336 2) 2. EVANS, R.G. Going for the gold: the redistributive agenda behind market-based health care reform. Journal of health politics, policy and law, 22(2): 427–465 (1997). 3. EVANS, R.G. Coarse correction – and way off target. Journal of health politics, policy and law, 22(2): 503–508 (1997). 4. EVANS, R.G. Financing health care: taxation and the alternatives. In: Mossialos, E., et al., ed. 2001 Funding health care options for Europe. Copenhagen, WHO Regional Office for Europe, 2001 (European Observatory Series). Further reading CULYER, A.J. Economics. Oxford, Basil Blackwell Ltd., 1985 (Chapter 24: National income accounting). EVANS, R.G. Strained mercy: the economics of Canadian health care. Toronto, Butterworths, 1984 (Chapter 1: Health and the use of health care). GAYNOR, M. & VOGT, W.B. What does economics have to say about health policy anyway? A comment and correction on Evans and Rice. Journal of health politics, policy and law, 22(2): 475–496 (1997). PAULY, V. Who was that straw man anyway? A comment on Evans and Rice. Journal of health politics, policy and law, 22(2): 467–473 (1997). Proceedings of the WHO Conference on European Health Care Reforms, Ljubljana, Slovenia, June 1996. Copenhagen, WHO Regional Office for Europe, 1997. RICE, T. A reply to Gaynor and Vogt, and Pauly. Journal of health politics, policy and law, 22(2): 497– 501 (1997). 3.3.2 Evaluation of health care reform options Panos Kanavos and Elias Mossialos8 Key messages • Policy-makers face dilemmas in the reform of health systems and the incompatibility of different reform objectives, for example extending cover or providing more choice on the one hand, and keeping within a tight budget. • Policy-makers and practitioners need to be aware of the limitations of their decisions, based on an analysis of financing, regulatory and provision implications. • A tailor-made cost-containment strategy addresses issues for payers, providers and consumers. Strategies related to provider payment methods that encourage efficiency, cost-sharing options, information on prices and utilization reviews, as well as efforts to reduce administrative costs (among other things) are discussed and placed in the context of the reform process. 8 This module was prepared by Dr Panos Kanavos, London School of Economics and Political Science (e-mail: Kanavos@lse.ac.uk) and Dr Elias Mossialos, Director of the WHO collaborating centre on European health policy at the London School of Economics and Political Science (e-mail: e.mossialos@lse.ac.uk). III - 38 Learning to live with Health Economics • An efficient approach to quality assurance in health care requires a means of monitoring performance, setting up and following a number of indicators, and a feedback system. • Administrative reforms, cost-containment strategies and infrastructure changes need to be analysed regarding the anticipated sources of financing and the expected level, distribution and timing of savings. • To pursue ways of improving efficiency, changes may be needed in provider payment mechanisms, the potential introduction of market elements, the role of incentive structures in addressing stakeholder behaviour on the demand side, and the role of consumers/patients. • An appreciation is needed of how the different stakeholders and professions interact in the face of reform and what their respective roles are. An appreciation of the decision-making process and consensus-building is provided. Tutors' notes • The module can be used with two main groups of professionals: (i) senior staff in ministries of health and health/sickness fund directors/managers, and (ii) (placing the emphasis on slightly

different material) hospital directors, clinical directors and other health care practitioners. The first group would benefit by exploring broad policy issues in terms of cost control, quality, financing and financing reform, incentives, and improving efficiency at the macro level. The second group would be keen to learn how specific aspects of incentive structures (e.g. costcontainment or budgets in general practice) would affect their behaviour and their clinical freedom. • It is important for participants from both groups to understand some key economic terms, such as scarcity of resources and opportunity cost, and the implications that these may have for the decisions they make. The best way to do that would probably be through the exercises, where they will be asked, for example, to discuss what they would be prepared to sacrifice for "additional units of benefit" (more cover, better care, etc). • It would be a good idea to try to apply the key messages to a geographical region with specific characteristics and a given legacy, for example when dealing with different types of professional in eastern European economies in transition (both in central and eastern Europe and the Commonwealth of Independent States (CIS)). • Beyond the teaching of concepts and what international experience suggests, participants should be encouraged to think strategically with regard to what is desirable and what is feasible within their operational environments. Again, exercises (based on some available empirical evidence) may help to transfer some useful experience from other settings and contextualize it in the setting where the training takes place. • The list of further reading at the end of the module should be adequate, but tutors and participants are invited to make use of the resources and case studies that can be found on the website of the European Observatory for training purposes, in order to promote a comparative element in the application of the training material. Introduction There are two main issues that should be borne in mind by policy-makers wishing to adopt reform measures. The first relates to the fact that the majority of health care reform programmes involve an imprecise definition of defects of the system and vague articulation of policy goals. Governments/ reformers are often reluctant to confront the issue of trade-offs between policy goals, for example, Learning to live with Health Economics III- 39 how much efficiency should be sacrificed to achieve equity goals; whether efficiency can be achieved only with relaxation of cost control; how can cost controls be elaborated to facilitate the achievement of equity, for instance, by using weighted capitation budgets; and how provider incentives and user charges can be used to influence the behaviour of key actors. Quite often this is deliberate; for instance, the British government did not wish to be "confused" by evaluation of the NHS internal market reforms. Consequently, the effects of the purchaser–provider split and GP fund-holding hospitals are largely unknown, with advocates marketing these structures worldwide as a success and opponents denigrating them as failures.
4 Neither advocates nor opponents have any robust evidence base to sustain their claims. Often, the political dimension is the key to initiating and implementing reform. This has been shown by the market-oriented reforms in the United Kingdom initiated and implemented by the Conservative government, and the 1997 "modern-dependable National Health Service" reforms, initiated and implemented by the Labour government. The second main issue relates to the import and transferability of reform ideas from other countries, often with markedly different socioeconomic conditions and stages of development. If such a transfer takes place, it needs to take into account national, economic, political, cultural, historical and social trends and be adapted accordingly to meet objectives such as extending access, containing costs, implementing quality assurance mechanisms, and improving system efficiency through an improved infrastructure. Extending access to health For many politicians and citizens, the defining objective of health care reform is to create more uniform, secure and effective access to health care and health insurance. The focus is understandable. Millions may be uninsured or otherwise lack reasonable access to health care.

Millions more fear that an illness, an employer's decision to cut health benefits, or some other event beyond their control could deprive them of coverage. Even voluntary actions, for example, a job change, are increasingly constrained by concerns about continued health coverage. What was once perceived as largely a problem for lowincome people is now a growing concern for middle-income people as well. It has been argued that health care costs must be contained before major steps to extend health coverage can be undertaken. Such a two-step reform strategy underestimates the foreseeable costs of not extending access, in particular the extent to which the lack of universal health coverage produces costly distortions in the way care is provided and financed and in the decisions made by employers, employees and others. These distortions include delays for patients in getting needed care, "job lock" (which occurs when a worker refuses an otherwise better job because it does not include any acceptable health benefits), and cost-shifting (when providers try to recover costs related to charity care and underpayments from public payers through higher prices to private payers). It is expected that expanding health coverage will be associated with higher health care spending – both public and private – in the short term. Although a phased-in strategy for broad reform, including a phased-in approach to improved access, is reasonable, such an approach should include early steps to achieve broader and more predictable health coverage. Expanded access should not become a secondhand contingency. The primary barriers to access stressed in most reform proposals are financial, especially nonexistent, inadequate or unreliable health insurance. Reform proposals regarding access should also be grounded in a realistic understanding that access to effective health services is more than a matter of III - 40 Learning to live with Health Economics money. Other barriers to access also require attention. In transition economies, in particular, the economic issues of defining an adequate insurance base and maintaining it are key for the coverage of the population. Key issues in extending coverage, therefore, may include the following. • All or virtually all persons, whether employed or not, ill or well, old or young, must participate in a health insurance/benefits plan. Specific provisions must be made for households or individuals that do not participate in the official sector of the economy, or are self-employed or employed in the primary sector. Provision must be made to cover employees and their families and for adequate funds for those not active in the official sector. • Whether a single or multiple insurers are envisaged, a uniform package of core or basic health benefits must be defined and periodically updated. The package should include services that are thought to be valuable in improving health. To limit inequities in access, the core package or standard plan needs to be reasonably comprehensive. • If multiple health insurance plans are permitted, policies should minimize barriers to initial and continued health coverage (such as waiting periods and restrictions on coverage for pre-existing health problems) for those who move, change jobs, fall ill, start or stop receiving public assistance, or face similar changes in their circumstances. • Requirements that individuals share in the cost of health coverage and health services should not create barriers to needed care for low-income individuals. • To reduce incentives for health insurance plans to compete for healthy individuals and avoid the ill (adverse selection), payments received by health insurers (from governments, employers, employees or other sources) should be adjusted to reflect important differences in the distribution of low-risk and high-risk individuals across such plans. Correspondingly, what individuals pay for health coverage should not be linked to their health status (past or anticipated), age, gender, occupations or similar factors. Thus, what an individual pays into the system for health coverage may differ from what is paid out to a health plan for enrolling that individual. • Critical cover, funding and other health insurance features should be made consistent across plans, more reliable and predictable over time, and less of a barrier to

continuity of health care and job mobility. • Proposals for reform should include specific provisions for benefits that cover all, or virtually all, the cost of services that are critical to the health and wellbeing of children and mothers, especially those at high risk. • Proposals to extend health insurance should define where coordination is needed with other public and, potentially, private initiatives that target non-financial barriers to improved access and health status. • Equal access is by no means the same as equal outcome and reform proposals need to consider policies to counter socioeconomic inequalities by intersectoral action. • Policies to improve access to the health services go hand-in-hand with the concept of geographical equity and the extent to which resources are allocated optimally throughout a given country. Distribution (allocation) formulas must be developed where they do not exist and incentives must be given to professionals to practise in remote areas. • Because reforms, once adopted, cannot just be assumed to be successful in meeting their objectives, policy-makers need to monitor changes in access over time. Exercise 1 Why undertake reform? On what basis are priorities selected? Who makes this selection? How are proposals for reform defined? Who benefits and who pays? Who decides? Cost-containment Given the many pressing demands on finite national resources and the rapid increase in the share of those resources devoted to health care, policy-makers, employers and ordinary citizens must be concerned with both the overall costs of health care and their rapid rate of growth relative to the overall economy. Cost concerns have been a major obstacle to efforts to expand access to health care for those who are uninsured or underinsured. High health care costs are also a major contributor to growing anxiety among the middle classes about the adequacy and continued availability of their health cover. To serve health and access as well as cost-containment objectives, policies to limit the rate of cost escalation need to be grounded in the concepts of: • value: how health care spending relates to the achievement of desired outcomes; • affordability: how health care spending relates to individual and societal resources; and • equity: how the financing and distribution of health services affects different groups. For these objectives to be achieved and sustainable, cost-management tools and monitoring structures are required which should encourage and emphasize individual, professional and organizational accountability. Detailed efforts to regulate prices, services and other aspects of day-today health care delivery run two major risks. First, some professionals and health care providers, health insurers and consumers may be preoccupied with manipulating the system rather than achieving more efficient and effective health services. Second, such manipulation may inspire ever more complex and voluminous rules that would ultimately defy sensible management or compliance by even the most well informed participants. The following specific policy
4 elements should have a role in a strategy for health care reform that promotes cost-containment. • Movement toward provider payment methods that encourage efficiency and economy in the provision of health care services as well as quality of care and good outcomes. • Some cost-sharing by most patients. • Better information on prices, quality and expected outcomes of medical services. • Methods for quality and utilization review that help practitioners, patients and others learn how actual care conforms to criteria for appropriate care and why care varies in effectiveness and efficiency. • Further movement to standardize many administrative practices and eliminate many costs associated with the immense diversity of billing, payment, audit, reporting and other practices. • A pragmatic mix of regulatory and market strategies. Some degree of local flexibility and discretion is also desirable. • Efforts to reduce administrative costs, may in some cases, conflict with efforts to collect more data for monitoring access and quality, and educational and other purposes. The key criterion for judging the appropriateness of administrative tasks and costs is whether the costs they impose are justified by

the degree to which they serve desired objectives related to access, quality, equity, efficiency and information. • Reform should discourage health insurers from competing on the basis of risk selection rather than effective management of care and costs. Proposals for reform should include provisions for standard benefit packages, risk-adjusted payments to health insurance plans (but not risk-adjusted individual premiums), special provisions for very high risk individuals (e.g. reimbursable or separate risk pools), monitoring of marketing and other health plan practices, and similar measures. Exercise 2 How can health care costs be contained? How does the concept of cost-containment relate to the concept of microeconomic efficiency? Quality assurance Health care reform proposals must aim to maintain and improve the health and wellbeing of the entire population, including groups with special health or access problems. At the same time, reform planners must design and organize policies and programmes to strengthen the value of health care expenditure – that is, what can be achieved, in terms of health and wellbeing of individuals and populations, through health care spending. Reform must be implemented so that expanding access and containing costs does not lead to unintended reductions in the quality of health care. Reform plans can achieve these objectives only with explicit attention to quality, which includes defining, measuring, assuring and improving the quality of care. A set of quality-related principles and policies for health care reform proposals must, therefore, be on the policy-makers' agenda. The emphasis on practice guidelines from this debate seems unavoidable. By way of context, two major changes in medical care should be noted. First, care is being evaluated increasingly on the basis of its processes and outcomes, rather than on its structural aspects, such as the credentials of health care professionals. Second, with the advent of better research methods and computer technology, clinical medicine is becoming more science- and information-based. These two shifts should yield better and more cost-effective care in the future. Health policies and reform packages should not create incentives that retard these promising developments. In the light of this, an agenda that focuses on quality includes the following points. • Proposals for reform should explicitly acknowledge three central issues that quality assurance and improvement efforts should address: (i) the use of unnecessary or inappropriate care, as well as over-provision of otherwise appropriate services; (ii) under-use of needed, effective and appropriate care, and (iii) lapses in technical and interpersonal aspects of care. • Proposals should define an approach to quality assurance that will be meaningful, efficient and acceptable to those with a stake in the process. • In considering outcomes, proposals should provide for the use of a wide range of health-related quality of life measures. • Proposals will need to reflect both concern with the quality of care provided by individual insurance plans and practitioners and attention to the quality of care across the entire system. • Proposals should be clear about organizational structures, procedures and divisions of responsibility and make explicit provisions for both internal and external monitoring of quality of care. Learning to live with Health Economics III- 43 • The quality assurance and improvement programme outlined in the proposals should include specific responsibilities for identifying and overcoming system and policy barriers to improved performance. • Proposals should mandate that quality assurance and improvement programmes track the effects of certain cost-containment processes. • Practice guidelines are an important element of reform and are related to appropriateness of care, while at the same time they may serve the objectives of cost control, benefit package design, rationing, competition and administration. Emphasis should be placed on the development of such guidelines by involving all necessary stakeholders. The issues of compliance and clinical audit are key for the adoption and implementation of such guidelines by clinicians. • The active implementation of quality assurance and good clinical practice indicators necessitates adequate

investment in information systems throughout the health sector, so that effective monitoring of practitioners, hospital activities, budget management and prescribing, among other things, can be carried out. • A formal, non-judicial mechanism by which individuals can voice grievances and obtain assistance should be available to all. Proposals for health care reform should mandate an additional responsibility for a quality assurance and improvement programme, namely to serve as a focus for consumer complaints or as an ombudsperson. Exercise 3 When evaluating various options for health care reform what are the key factors to take into account? How? What impact might environmental factors or the historical context have on this debate? Reform of financing Many steps proposed to improve access can be expected to add significant new financial burdens for employers, governments and some individuals (e.g. those who moved from low-risk insurance pools to average-risk pools). Whether a given country will accept such burdens and how they will be distributed are clearly political decisions. Policy-makers may need sufficient popular support for increased taxes or insurance premiums that may be necessary to protect more individuals against the financial consequences of ill health. Consequently, financing policies will be influenced by several considerations, including equity and efficiency arguments. Proposals for reform should move the health care system toward more broad-based, efficient, equitable and transparent financing arrangements. They should be grounded in realistic estimates of expected expenditure and revenues and their distribution across population groups. Proposals for health care reform should explicitly: • describe anticipated sources of financing and also their expected level in absolute terms and in terms of covering the entire population; • identify the expected level, distribution and timing of savings expected from administrative reforms, cost-containment strategies, infrastructure changes and other provisions; • estimate the level and distribution of public and private expenditure (including tax expenditure) needed to implement the reform proposal over a period of several years and state the assumptions, modes, data and similar elements used in developing these estimates; • describe financing not only for health care services but also for basic elements of the health care infrastructure including public health, research, education and capital investments; • make sure that projections of revenues and expenditure should be subjected to review and audit by independent, nongovernmental sources. Exercise 4 Once the objectives of health care reform in a particular context are identified, what implications do they have for reform of financing? Improving the infrastructure for effective change Making policy is not the same as implementing it. The necessary conditions for effective short- and long-term implementation of a proposal for health care reform should be considered in the design of the proposal. Some of the conditions for successful 4 change involve matters beyond the scope of a reform proposal per se, for example, political leadership and the general condition of the economy. Proposals should, however, discuss how certain broad features of the government and health care delivery infrastructure would be designed or shaped to support the objectives of reform. Four important elements of this infrastructure are: • governance and administration, which involve the transformation of statutes into regulations, enforcement and oversight mechanisms, and other public and private action needed to implement reforms; • human and physical capital, which includes the appropriate level, mix and distribution of health care professionals, facilities and equipment; • development of knowledge, that is, the biomedical, clinical and health services research and the health data systems that create, aggregate, analyse and disseminate information that practitioners, administrators, consumers and others need continuously to improve health and meet other objectives of reform; and • public health policies and programmes that focus on the community rather than on the personal health services that are the central concern of health care reform. In addition, other elements may be

considered part of the administrative apparatus necessary to promote the goals of health care reform in the longer run or to advance other important social goals. Among these are, for example, the definition of clinical malpractice, the creation of better legal responses to clinical errors, and the protection of the privacy and confidentiality of sensitive patient data that reside in computer-based records and databases. • Reform packages should be clear and realistic about the timetable expected for full implementation. Monitoring mechanisms will be needed to detect inadequate implementation, unanticipated negative effects, and positive results that should be built upon. • Any proposal should make clear how issues of human and physical capital supply and distribution will be dealt with. • Proposals should describe policies and priorities that determine the roles of various providers, including nurses and physicians, and the settings from which they should deliver care. Particular emphasis must be given to primary care providers and how the shortfall in such clinical disciplines can be overcome in both the short and long term through changes in methods of payment for practitioners, educational programmes, and improvements in the attractiveness of the primary care function. • Proposals should include a specific mandate for the development and continued support of comprehensive databases in the health field. Learning to live with Health Economics III- 45 • Steps must also be taken to improve survey and statistics capabilities, particularly by instituting a national health care survey that can track progress and identify problems in the implementation of efforts to reform. • Proposals should promote universal implementation of computer-based patient records (CPRs) and CPR systems among providers. The same holds for information services for health services research and health technology assessment. • There must be an absolute increase in support for a range of research and information activities if reform activities are to be implemented and evaluated satisfactorily, particularly in the area of clinical evaluation sciences and health services research. • An improvement in a country's capacity to carry out effective technology assessment efforts is needed. Proposals must be explicit about how technological innovation and the diffusion of health technologies will be dealt with over time. · Proposals should encourage a partnership between the personal health services system and the population-based activities of the public health system, as well as occupational health activities. Exercise 5 What are the main factors to be considered in order to ensure that the implementation of health care reforms is effective and sustainable? How can it be ensured that the incentives encourage desirable action by participants and promote the objectives which are intended in the longer term? Efficiency and effectiveness To measure efficiency, the cost of efforts must be related to results and the ratio between the two assessed. However, measuring results is very difficult in many policy areas. It is often equally difficult to assign costs to particular results, even if those results were measurable. For much the same reasons, equal difficulties may arise in attempting to measure effectiveness. Surrogate measures of the intended results are frequently developed for public programmes and policies, but all require the suspension of disbelief to be accepted as valid and reliable descriptions of what is occurring in the reform process. As a consequence of these difficulties in measuring the substantive sequence of government actions and plans for reform, much of the assessment of performance in government depends on the evaluation of procedural efficiency, i.e. not so much what is produced as how the agencies go about producing it. The efficiency of public agencies may be assessed by determining the speed with which certain actions occur or by ensuring that every decision goes through all the appropriate procedural stages specified for a process. The important point here is that goals may be displaced when evaluations are made on a basis that posits the process itself, rather than the services that it is intended to produce, as a measure of all things. Concern for measuring efficiency through procedures may, in fact, actually reduce efficiency

in producing results for citizens, because of a proliferation of procedural safeguards and associated “red tape”. Improving efficiency Improvements in efficiency have featured quite strongly in most countries’ efforts to reform their health services over the past twenty years. Efficiency can be thought of in terms of macroeconomic and microeconomic efficiency. The former relates to the concept that the costs of health care should not exceed an acceptable share of national resources. The latter refers to the fact that the mix of III - 46 Learning to live with Health Economics services chosen should secure health outcomes and consumer satisfaction at minimum cost. Macroeconomic efficiency has been examined under the umbrella of cost-containment and policymakers’ efforts to control total expenditure on health as a proportion of national resources. Microeconomic efficiency is a more complicated notion, since it seeks to address different objectives: to satisfy consumers, to grant incentives to providers, and to induce payers to behave optimally. While macroeconomic efficiency is a more general concept, achieving microeconomic efficiency certainly contributes to it. The pursuit of microeconomic efficiency should include the following: • five key dimensions, which can subsequently be pursued at a more decentralized level: (i) lowering the cost of achieving a desired outcome; (ii) providing greater consumer satisfaction for patients and their relatives; (iii) reducing the time and travel costs for patients and their relatives; (iv) reducing the costs of administration and regulation; and (v) encouraging technological and organizational advances to raise productivity; • measures at the macro- and micro-level to address problems in the current methods of paying providers and to improve incentives that would, in turn, lead to greater efficiency; • at the macro-level, a shift from an integrated or command and control model to a public contract model with the introduction of competition into the health care markets has been shown to contribute to greater system efficiency, although a number of issues still need to be addressed: (i) both buyers and sellers being public bodies; (ii) oligopolistic behaviour of health professionals; (iii) conflict between consumer choice of provider and “third-party” choice of best buy; (iv) the extra administration costs of contracting and whether these counterbalance efficiency gains; (v) avoiding cream-skimming; (vi) protecting quality of care; and (vii) whether there will be adequate disclosure of information to make the market work as intended; • the issue of market competition and where it should occur – several options are available: (i) enabling practitioners to be responsible for the care of their patients, both clinically and in terms of managing their total cost; (ii) introducing competition between insurers, although this also necessitates action regarding regulation; (iii) separating purchasers from providers, which should ensure that there is adequate scope for competition between providers; and (iv) encouraging self-governing hospitals with the objective of improving micro-efficiency through innovation and less
4 bureaucratic control; • the issue of provider payments (professionals and hospitals) and decisions about policies that improve efficiency while at the same time save on costs; • policies that would increase the flexibility of the health system and the kind of services it offers, for example developing alternatives to hospital care such as stand-alone facilities, day care and community-based services. Learning to live with Health Economics III- 47 Exercise 6 How can (a) the development, dissemination and use of knowledge, and (b) monitoring, evaluation and (when necessary) modifications to health care policy and practice be harnessed to ensure that health care reforms are appropriate, evidence-based and adjusted appropriately as new knowledge becomes available? Implementing funding/financing reforms in central and eastern Europe and the CIS Many of the countries emerging from socialism rejected the Semashko model in favour of the Bismarck model. The centralized model of general taxation with government control (i.e. the Beveridge model) was not politically feasible at the time so, instead, social insurance was embraced as the preferred choice. Most countries have encountered difficulties in making this model work successfully in a period

of rapid economic decline. While the context and the options reviewed and analysed in the previous chapters are relevant to the debate about health sector reform in eastern European economies in transition, aspects and challenges of the reform process that are prevalent among countries in transition may also need to be considered. Although there is an additional module on health care reform issues in the countries of central and eastern Europe and the CIS, some elements that could be examined in this context (bearing in mind the agenda defined in the previous chapters) can be addressed in the following exercise. Exercise 7 • How does the size of the informal economy, the agricultural labour force and the self-employed, and the collection of contributions, affect the feasibility of social insurance as the main source of finance? • What are the implications for the efficiency and equity of the health sector as a whole when highly segmented systems are implemented, providing cover for only part of the population (as occurs in Latin America)? • Have single or multiple fund systems performed better? Why? • What difficulties have emerged because of different systems of management or public/private ownership? • What systems of regulation and administration have proved most successful? • Consider how successful the process of decentralization has been in the countries of central and eastern Europe, and how devolution to local insurance funds has operated in practice. Further reading ADAY, L.A. ET AL. Evaluating the medical care system: effectiveness, efficiency, and equity. Ann Arbor, MI, Health Administration Press, 1993. FIELD, M.J. ET AL., ED. Assessing health care reform. Committee on Assessing Health Care Reform Proposals, Institute of Medicine. Washington, DC, National Academy Press, 1993. MAYNARD, A.K. & BLOOR, K. Introducing a market to the UK National Health Service. New England journal of medicine, 344(9): 604–608 (1996). MOSSIALOS, E. & LE GRAND, J., ED. Health care and cost-containment in the European Union. Aldershot, Ashgate Publishing Limited, 1999. The reform of health systems: a review of 17 countries. Paris, Organisation for Economic Co-operation and Development, 1994 (OECD Health Policy Studies No. 5). SALTMAN, R., ET AL., ED. Critical challenges for health care reform in Europe. Buckingham, Open University Press, 1998. Individual country case studies from both EU countries and the rest of Europe can be downloaded from the web page of the European Observatory for Health Care Systems http://www.euro.who.int/observatory/TopPage (accessed 6 November 2002). 3.3.3 Economies in transition Yannis Yfantopoulos9 Key messages · The economic principles for a command economy and a market economy differ substantially, and these differences have major implications. · The major issues of health reform policies in the transition countries are discussed and the trends are analysed with reference to structural, political, economic, social and health transformation. · The economic crisis in the Russian Federation has brought a series of negative economic effects in the newly independent states (NIS), such as a fall in production, spiralling inflation, increasing unemployment, poverty and social deprivation, which all lead to violence, increased alcohol consumption, and a significant deterioration in health status outcomes. · Restrictions in data sources and problems envisaged in time trends analysis are highly relevant when changes in outputs and inputs over time are being considered. In a planned economy, a net material product-based system is used for the measurement of output, whereas in a market system, national accounts are used for the measurement of macroeconomic variables. · The changing role of government in transition economies has wide-ranging implications, including for the health care system and for health outcomes. · The reform of health care from a state bureaucratic system to an insurance-based system is critically evaluated, particularly in relation to the quality of services, access to care, the efficiency principle and the financial sustainability of reforms. · The increasing trends towards activities in the underground economy are

explored, together with their implications. 9 This module was prepared by Professor Yannis Yfantopoulos from the National and Capodistrian University of Athens (e-mail: yyfa@otenet.gr). The author is grateful for a number of comments by experts in central and eastern Europe and the newly independent states, notably Dr Eva Bondar (e-mail: bondar_eva@s16.kibernet.hu). Learning to live with Health Economics III- 49 Tutors' notes Given the breadth and complexity of the subject, considerable background material based on economic analysis is included. Tutors are also encouraged to supplement the material with appropriate case studies. The audience needs some familiarity with the overall health context and some appreciation of the economic tools, such as Module 5.4.1 Economic Modelling and Forecasting. It is nevertheless intended that a more general audience can – with appropriate tutoring and using the research conclusions – tackle the exercises. Introduction The purpose of this module is to discuss issues related to health economics for the economies in transition. The term "transition" is used here to portray the structural, political, economic, social and health transformation of the post-communist societies in southern and eastern Europe, and to understand the major determinants that have influenced the evolutionary changes in health status and expenditure on health there. The end point of the transition is likely to differ between countries for a wide variety of reasons. Indeed, a given point may never be reached, as other changes may occur first. The process of transition may be more amenable to consistent discussion than the final destination, and changes in the health care sector may interact, positively or negatively, with changes in other sectors. It does not need to be emphasized that the learning process can be mutual, based on respect and an openness to a range of learning opportunities: it need not necessarily operate in a single direction (west to east). The socialist health care systems were often quite successful with, for example, some important basic tasks, such as vaccinating all citizens, reducing mortality from infectious diseases and addressing maternal and infant mortality. Inevitably, the model-like approach focuses on a limited number of (major) factors. The reality is much more complex, varying between countries and over time. As Saltman & Figueras say: "Drawing conclusions about current patterns in European health care reform can be a complicated process" (1). Similarly, McKee & Healy comment that "one of the pervasive messages in this book is the need to take account of different contexts" (2). While this is recognized, not all factors can be included in this brief module or lend themselves particularly to the approach adopted here.10 Some points should perhaps be emphasized. First, many of the countries of central and eastern Europe did not voluntarily choose the political or economic systems from which they are now changing. In many cases they are seeking to make the best of situations. Their past conditions and the present can, however, influence their future through
4 attitudes, incentives and expectations, as well as through more specific manifestations, such as the health care resources of money, skilled labour and knowledge. For example, the lack of experience with market-based systems can result in unrealistic expectations, underdeveloped complementary structures and arrangements, and a failure to take full advantage of emerging opportunities. Any sort of independent economic entity may be seen as private, because it is not part of the previously dominant state complex. The countries in transition also vary greatly, whereas the module takes a broad and general overview. 5 For more detailed information on health care reform in Europe see Saltman & Figueras (1) and Saltman et al. (3). For more specific studies see Mossialos et al. (on funding options) (4), Saltman et al. (on the regulation of European health systems) (5), McKee & Healy (on hospitals) (2), McKee et al. (on health care in Central Asia) (6), and Mills et al. (on the challenge of health care reform) (7). III - 50 Learning to live with Health Economics Secondly, the module generally considers the public sector at the level of the national state. In fact, collectives can assert and pursue public purposes, in health care and in other sectors, through many forms

such as regions, cities, communes and even voluntary, religious and charitable organizations. Thirdly, the demographic and epidemiological processes which are occurring in many of the countries of central and eastern Europe do not reflect a uniform structure of health development. Broad comparisons, for example of overall levels of health status for health expenditure, can obscure these important differences, but they need to be kept clearly in mind. Fourthly, there are problems associated with the transition process itself, quite apart from the starting point and the likely eventual outcomes. For example, resources can be suddenly reduced, often widely, at the same time as new, sophisticated and often relatively expensive foreign drugs, equipment and medical technologies become increasingly available. Since 1989, several radical discontinuities have been observed in health inputs and outcomes that have influenced the transition process of the economies in question. In the newly independent states which have emerged, the transition from centrally planned to open-market economies introduced many problems and tremendous imbalances in countries that had been highly dependent and heavily subsidized by the economic authorities in Moscow. The Leontief-type of predetermined production and distribution plans provided little space for exports and economic transactions with the rest of the world. The economic crisis in the Russian Federation brought a series of negative economic effects in the NIS, such as a fall in production, spiralling inflation, increasing unemployment, poverty and social deprivation which lead to violence, increased alcohol consumption and significant deterioration in health outcomes. In the NIS economies as a whole, the inflation rate was around 349% by 1995 and production fell by half between 1991 and 1995. In 1993 the highest inflation rates were recorded in Ukraine (4735%), Armenia (3732%) and Turkmenistan (3102%). In 1994 the highest price increases were in Georgia (15 606%), and Armenia (5273%). By the end of the decade, in 2000, prices were fluctuating around 28% in Ukraine, 10% in Turkmenistan, 4.4% in Georgia and -0.2% in Armenia (8). Poverty in the Russian Federation reached its highest level in July 1992, affecting 46% of the children under 15 years of age. The economic decline brought a significant reduction in health and social expenditure that further influenced the health and social outcomes. For example, public expenditure on health fell in Turkmenistan from 5.5% of gross domestic product (GDP) in 1988 to 2.8% in 1994. Similar reductions in expenditure, absolute and relative to GDP, have been observed in all the transitional economies. Increasing trends in infant mortality were recorded during the period 1989–1993 in the Russian Federation (from 17.8 to 19.9), Kazakhstan (from 25.6 to 28.1), Tajikistan (from 43.2 to 47.0), Azerbaijan (from 26.2 to 28.2), Ukraine (from 13.0 to 14.9) and Bosnia-Herzegovina (from 18.4 to 22.7), followed in all cases by significant reductions. A comparative analysis can be helpful, examining trends in health status and changes in health resources among different groups of countries. The analysis explores both macro- and microeconomic aspects. The data are the best available and are derived from WHO, the World Bank and the United Nations. Twenty-two Member States of WHO are classified as transitional economies, representing 7% of the world's population. Planned versus market economy Because resources are scarce in any society, whether communist, socialist or capitalist, politicians, administrators, producers and consumers have to make choices concerning three basic questions in any economic system. Learning to live with Health Economics III- 51 1. What goods and services should be produced and in what quantity? For example, how many hospital beds, and primary health centres, should be developed? How much public or private care should be provided? 2. How should the production of the health goods and services be organized. For example, what techniques and what input mix will the health system use to produce a certain level of health for the society? Should a society produce more primary health and preventive services compared to hospital services? 3. For whom should services be provided? For the

elderly? For the young? For the rich or for the poor? However there are considerable differences between economic systems in the way that they tackle the above questions. For instance, in a totally planned or a command economy (usually associated with a socialist or a communist society) the government or the central planning committee is responsible for taking decisions. The production factors of land and capital are collectively owned. The process of satisfying human wants is predetermined by a committee which is responsible for allocating resources. Fig. 1 presents the three-sided relationship between the state, the producers and the consumers. A Leontief-type of input–output analysis is used to determine the output produced in the society and the resources required for such production. Outputs of one sector can be used as inputs in other production activities. By this process the state creates the general framework of a planned economy. Fig. 1. The process of a command economy Command economy Planning process Supply of goods Supply of labour Households Firms III - 52 Learning to live with Health Economics At the other extreme lies the free market system which is associated with a capitalist system (Fig. 2). There is much less government intervention and decisions are taken by the consumers and producers. The consumers aim at the maximization of their utility and the producers aim at the maximization of their profits. The free market ensures that an optimum allocation of resources is achieved when certain assumptions are fulfilled such as perfect knowledge among consumers and producers, no uncertainty, constant returns to scale, and perfect mobility among the factors of production. Fig. 2. The free market system Product market Market equilibrium Factor market Physicians, nurses, managers Factor equilibrium Demand for medical goods and services Households Supply of labour Supply of medical goods and services Firms Demand for labour P S D Q * Learning to live with Health Economics III- 53 However, in the health care sector the classic thesis of Arrow (9) revealed that the market itself fails to produce an optimal distribution of resources for a number of reasons: externalities, such as infectious diseases and altruism; social and historical controls, such as the prohibition of illicit drugs; the existence of uncertainty in the incidence of disease and the efficacy of medical interventions; asymmetry in information between doctors and patients; incomplete coverage of all risks; non-increasing returns to scale; and monopolistic tendencies. Interestingly, he also stated: “I propose here the view that, when the market fails to achieve an optimal state, society will, to some extent at least, recognize the gap, and non-market social institutions will arise attempting to bridge it.” (9) In reality, in the majority of health care systems, a mixed economy is observed where decisions are taken partly by the government and partly by the competitive forces of supply and demand. Exercise 1 In an economy which is in transition from a centrally planned to a more decentralized system, with a greater role for market forces and the independent interactions of producers and consumers, and with a political system which is in transition from a centralized to a more pluralistic and democratic set of arrangements: • What effects do these have on the priority attaching to health care compared to other important social objectives? • What implications do these have for the relative weight given to efficiency and equity objectives (specifically in relation to the health care system)? • What role is played by the underground economy and the incentives it embodies, both in the short term and in the longer term? Political and economic transition The transition This section considers the theoretical link for the societies in transition between the political and economic spheres and assesses critically the changes implemented during the period from 1989 to 2000. Emphasis is given to macroeconomic issues (such as output, investment, inflation, unemployment) and microeconomic issues generated by the liberation of prices. Other issues, including the underground economy and corruption are discussed briefly. After the post-war period many European countries witnessed substantial social and economic transformations, mainly attributed to economic growth and

political reforms aiming at more democratic and competitive electoral systems. In the central and eastern European countries, the fall of the Berlin Wall in November 1989 signified a new era, which was accompanied by peaceful political transformations to democratic societies and economic transitions to market economies. Free and fair elections have led to democratic changes in the Czech Republic, the former Yugoslav Republic of Macedonia, Hungary, Poland and eventually the Russian Federation. New multiparty systems have emerged after the collapse of bureaucratic socialism. The previous authoritarian socialist systems have been replaced by a new élite of politicians who have emerged from a politically competitive system promoting parliamentary democracy. III - 54 Learning to live with Health Economics In the economic sphere marked changes have been observed, not only between the countries in transition but also within these countries among social classes and regions. The more advanced countries, after rapid liberalization, have managed to achieve macroeconomic stabilization and gradually introduce sustainable institutional changes. In the less developed countries, the privatization and liberalization of the economic systems have been jeopardized by unfavourable legacies of the previous communist regimes, which slow down the process of economic transformation. Nevertheless, even small-scale privatization has yielded significant benefits in terms of employment and growth. The variation in implementing reforms across the transition countries is mirrored in their macroeconomic performances. Macroeconomic performance During the decade 1990–2000, the key challenge confronted by the economies in transition involved the restructuring of their entire economies. This involved moving away from a command economies and opening up to a modern, dynamic and more competitive environment. Inevitably, the composition of GDP was totally restructured as a result of substantial changes in the production process and in the utilization of the factors of production. In particular, the production of output is no longer predetermined and dictated by the central planners, but is defined by the competitive forces of supply and demand. Enterprises produce only what the consumers are willing to buy. The new system transformed the previously socialist society and had a profound impact on the quality of products and the welfare of consumers. In addition, the demand for new factors of production totally reshaped the factor markets for capital and labour. In relation to capital, new technological advances were introduced and new investment programmes launched, financed by privatized banks and credit institutions. In the labour market new skills were in demand, and the changing demands also created large-scale job losses and high levels of unemployment. Poverty, crime and alcoholism increased, partly as a result of these changes, and there was a substantial deterioration in the health status of the population. The World development report 1996 (10) emphasized the growing inequalities in the Russian Federation and eastern European countries. Inequality increased most rapidly in eastern Europe and the countries of the former Soviet Union after the collapse of Communism. In the Russian Federation, the number of people living in poverty (on less than US $4 per day) soared from about 2 million in 1987 to 66 million – four out of ten Russians – by 1995 (11). These changes were accompanied by new methods of measuring output. The approach changed from a material-based measurement to a national accounts basis, which is common in market economies around the world. During the transition period the volume of production fell, which was reflected in the growth rates of GDP for the societies in transition. However, this fall in production and the annual rates of economic growth were far from uniform in the various economies. Fig. 4 presents the annual rate of growth for the Commonwealth of Independent States and the Baltic countries from 1989 to 1999. After the first years of substantial negative economic growth, a weak recovery was achieved by the mid-1990s. In 1996 the rates of economic growth in Latvia, Poland and Slovakia were above 6% and in Lithuania just under 6%, but

more modest in the Czech Republic and Hungary. Learning to live with Health Economics III- 55 Fig. 3. Issues in the political and economic sphere Issues Political sphere Political model Economic sphere Economic model Ownership Macro-economy Output growth Investment Inflation Unemployment Micro-economy Choices Market Liberalization of prices Specific issues Underground economy Corruption Before 1989/1990 Pre-transition Autocratic Communist rule Party control Nomenclature Command Leontief Economy Collective Low State/no foreign investment Low/stable wages/prices Low/unpaid wages No choices No market No Existing under-reported Covered After 1989/1990 transition Pluralism Political elite Elections Political competition Market/ competitive economy Private Declining/increasing International involvement Hyper-inflation Economic instability Very high Explosive Yes Restructuring of markets Price liberalization Growing Extensive III - 56 Learning to live with Health Economics Microeconomic prospects To achieve sustainable economic growth, liberalizing reforms should be complemented with institutional changes aiming at the restructuring of markets. During the first phase of transition the old large-scale industrial complexes were faced with great challenges. Many had to close, due to inadequate labour skills, technological infrastructure and managerial competence. Rapid industrial downsizing led to massive unemployment, social upheavals and stress. Over the medium term the transition economies developed new labour skills, attracted foreign investments and rapidly improved their productivity. New products which were introduced to the market strengthened the competitive spirit of enterprises, consumers and the wider society. The choices available to, and the welfare of, many consumers improved substantially, although inequalities increased sharply. The role of the state was of vital importance during the transition period. Politicians and administrators faced serious challenges in changing the form of government from planned bureaucratic economies to market-oriented systems. New legislation was enacted to promote economic reforms aiming at the development of markets and the establishment of private enterprises. However, despite the impressive achievements in the liberalization of the system, the quality of government and state intervention in the economic system still varies widely across the different economies in transition. In many cases the transition phase was accompanied by a growing underground economy and corruption in the civil service. Ensor & Denan discuss corruption as a challenge to effective regulation in the health sector (5). Fig. 4. Growth rate in real GDP in the Baltic States and the CIS 0.3 -5 -8.1 -9.5 -5 -2 0 2 Percent -0.5 -0.2 -1.2 2 0.8 -6 Learning to live with Health Economics III- 57 Exercise 2 To what extent is the situation in your country (a) similar to, and (b) different from, the broad picture outlined in the module and the particular aspects which are emphasized there? To the extent that there are differences, what implications do they have for: • the priority given

to health care compared to other social objectives • efficiency and equity in health care • the possibilities for intersectoral action • the relationships between the official and the underground sectors in health? Consider the similarities and differences in relation to: • the processes of transition • the end point to which transition is directed – indeed, is there any such point? Health reforms This section analyses the issues relating to health economics in transition economies with reference to decision-making, management, health objectives, resource development and financing of the system. The characteristics of the traditional Semashko health care model are analysed and compared with the health care reforms implemented after 1989. Table 1 portrays the changes implemented after 1989 in various fields of the health economy. The need for health reform The need to implement health care reforms in the countries in transition may be attributed to the following reasons: • collapse of the soviet Union and the consequent political, economic and social crisis • transition from state-managed to market systems • new social risks related to the economic crisis (unemployment and poverty) • decline in living standards • increasing inequality in the distribution of

income • high rates of poverty and social exclusion • increasing incidence of alcoholism, crime and smoking • more recorded cases of drug addiction and AIDS. Numerous empirical studies have documented the negative impact of the above factors on people's health. In these countries a sharp deterioration in health status has been recorded since the transition began. Life expectancy continued to decline during the whole decade and remains far below European Union levels. Infant and perinatal mortality have shown a similar gap compared to western European societies. The incidence of tuberculosis and other infectious diseases has increased substantially. Since the first stage of transition, the newly independent states and the countries of central and eastern Europe have begun to assess health outcomes more carefully and to discuss critically innovative avenues for reform. Many aspects of the reforms introduced in these countries have had to follow a different path from those observed in western Europe. The latter had already reached a high level of III - 58 Learning to live with Health Economics health outcomes, and since the share of GDP devoted to health was more than 8%, cost-control and cost-containment policies were introduced to control costs. The countries in transition, which confronted increasing mortality and declining life expectancy, adopted a more expansionary model. They aimed to increase their low levels of health expenditure, both in absolute terms and as a percentage of GDP. However, it was evident that expansion should be pursued on a cost-effective basis and in an equitable way. New management techniques and economic evaluation were considered as appropriate tools to monitor changes and assist decision-making. In the first phase of introducing health reforms the major objective was to move away from a state-controlled bureaucratic system, based on the principle of state monopoly, and gradually to develop a more pluralistic network of public and private insurance initiatives, financed from public and private sources. Provision of services The traditional Semashko model was based on the maximalistic principle of: • large hospitals, often with more than 1000 beds; • very large numbers of facilities; · large numbers of doctors with very low salaries (much lower than civil servants); and • large numbers of nurses with low salaries and low education. Table 1. Health economic issues in transition economies Issues Before 1989/1990 After 1989/1990 1.Decision-making Centralized Signs of decentralization and regionalization (St. Petersburg Region) 2. Management State-managed Towards an internal market comprehensive system managed system • Efficiency Low Increasing • Effectiveness Not assessed Some cost effective therapies 3. Objectives • Equity Emphasis on per capita Problems with vulnerable distribution of services groups, aged, poor, unemployed • Quality Low Increasing • Doctors Oversupply/mainly Declining trends specialists, low productivity, 4. Resources no incentives • Nurses Oversupply Declining trends • Beds Oversupply Declining trends • Medical technology Lack of infrastructure Increasing infrastructure 5. Financing • Public: 1. State Yes Yes 2. Region Yes Yes 3. Health insurance No Yes • Private: 1. Private insurance No Yes 2.Out-of-pocket No Yes payments • Under-the-table payments Limited Yes " " " " " " " " " " " " " " " " Learning to live with Health Economics III- 59 Inevitably the result was low quality of services, low medical productivity, no incentives to produce more, and under-the-table payments to medical personnel. The lack of advanced medical technology, combined with the shortage of health economists and administrators, contributed to large inefficiencies in the delivery of services. In the process of reform many positive changes have been observed: • introduction of decentralization of decision-making; • exploration of new management techniques • changes in the ownership of health care facilities • privatization in primary care services • large-scale privatization introduced into the pharmaceutical sector • privatisation of small hospitals • reduction in the number of hospital beds • introduction of medical technology improvements in hospitals • substantial increase in the application of health economics and

medical management • development of quasi-autonomous sickness insurance funds. It is widely accepted that significant progress has been achieved during the last decade towards greater cost–effectiveness and improvements in efficiency. Financing Financing issues are explored here in the context of the changing public/private mix in the health care systems of the economies in transition. The important role of the public sector in the financing of health services has often been discussed in the literature of health economics under the theory of public goods and market failure. Private goods (such as personal health services) with substantial externalities and where there was a significant collective interest could also be publicly subsidized. For private goods with exclusive personal benefits, such as cosmetic dentistry, it has often been argued that the individual should be responsible for covering the cost. OECD, World Bank and WHO reports reveal that in all countries of the world there are public and private initiatives in health. The key question concerns the optimal proportions of public and private involvement in the health sector to ensure efficiency in the utilization of resources and equitable access to a certain spectrum of services for all citizens. Health insurance has been proposed as a method of providing services in a cost-effective way, because it reduces the overall risks accruing to society by pooling all the risks. The countries in transition have implemented health reforms aiming at the introduction of compulsory health insurance, and the separation of state budgets from employers' and employees' contributions paid directly to insurance funds. Various forms of health insurance have been introduced or are in the process of implementation, as in Bulgaria and Romania. In some countries, compulsory health insurance has been introduced covering the whole population, whereas in others (e.g. Albania) health insurance only covers part of the population. The financing mechanisms also present many dissimilarities. For instance, in Estonia a tax collection system has been introduced which is based on contracts between the insurance agencies and the tax authorities. In Poland all the insurance contributions covering health, pensions and unemployment benefits are collected by the insurance agencies. III - 60 Learning to live with Health Economics Several problems have been recorded, including in the collection of payroll insurance contributions. Changes in employment status have created uncertainty for many insured people. A number of countries declared significant problems in collecting contributions, even from workers who were employed in large industrial complexes and in successful enterprises. In Hungary, some insurance funds went bankrupt and never paid their debts. The role of the state Despite the changes, public involvement in the financing of health services has remained substantial. The forms of public intervention vary significantly from country to country. In the majority of the countries in transition (for example, the Czech Republic, Poland and the former Yugoslav Republic of Macedonia) the state acts in a manner which
5 is complementary to the insurance system and undertakes to cover the insurance contributions for some vulnerable groups such as the elderly, the unemployed and the poor. In other cases the role of the state is more targeted to the poor and disadvantaged by providing a minimum package of public health services. It is widely evident that, because of the reforms which have been introduced and the emergence of fee-for-service arrangements in hospitals and primary health care, the poor and the unemployed, who represent a high share of the population (around 20–35% in a number of these countries) cannot afford to pay the higher costs of care. As a result they have been pushed out of the health system. In some countries, such as Albania and Latvia, the government has introduced a minimum package of health care for the uninsured in order to ensure that their basic needs are covered. Recent experience reveals, however, that in times of economic crisis the sustainability of such systems can become uncertain. Expenditure There are problems in assessing trends in health expenditure in the countries in transition, because the existing sources are scarce and the data are not fully comparable. Notwithstanding, an attempt is made to establish some international comparisons

between these countries. It has often been argued in the literature of health economics that the proportion of GDP devoted to health rises with the economic prosperity of the country. Hence, richer countries tend to spend more on health than less developed ones. Fig. 5 presents the relationship between GDP per capita and the share of GDP spent on health for the economies in transition. A linear and a logarithmic form are both explored to approximate the above relationship. The coefficient of the double logarithmic equation shows an income elasticity of 0.82. The logarithmic relationship is used to investigate the existence of diminishing returns to scale in the expansionary process of health expenditure. This hypothesis is often supported by the fact that as GDP rises, more cost-effective techniques are introduced in order to achieve a more efficient utilization of resources. For instance, in the case of the Czech Republic, the share of GDP devoted to health increased from 5% in 1990 to around 8% in 1994. Following the introduction of cost-control measures, the share of GPD devoted to health fell to 7.3%. Similar patterns of expenditure have been identified in other European countries. Learning to live with Health Economics III- 61 Fig. 5. Relationship between GDP per capita and percentage of GDP spent on health in the economies in transition 5 6 7 8 9 10 Gross domestic product % GDP spent on health The percentage of GDP spent on health in the countries in transition suggests that they can be divided into two broad groups. The first group includes the richer countries (Croatia, the Czech Republic, Hungary, Slovakia, Slovenia and the former Yugoslav Republic of Macedonia) which spend a higher proportion of their GDP (6–8%) on health. These countries introduced economic and social reforms at an early stage of their transition process. In the health sector, early changes from state to insurance-based systems financed by a payroll tax contributed to sustained development. The second group includes the countries with delayed health reforms such as Albania, Bulgaria, Latvia, Poland and Romania. They spend around 3–5% of their GDP on health. Underground economy The role of the private sector in the finance and delivery of health services has been increasing around the world. Although there is no harmonized methodology for recording private expenditure among the developed and least developed countries, some recent estimates suggest that average private expenditure on health represents 2–3% of GDP in the developed countries. In the economies in transition, the corresponding share of GDP is 1.1%. However, this figure does not include a large underground economy in health care, which takes the form of unofficial charges paid for outpatient specialist consultations, surgery and other inpatient services. Fig. 6 shows informal payments in some selected eastern European countries. The highest per capita payments are for inpatient care followed by drugs expenses. III - 62 Learning to live with Health Economics Fig. 6. Average informal payments per visit for outpatient care, inpatient care and drugs in selected eastern European countries (1995 US$ adjusted for purchasing power 0 25 50 75 100 125 150 175 200 Albania (1996) Bulgaria (1997) Georgia (1997) Kazakhstan (1996) Poland (1998) Romania (1997) Russian Federation (1997) Outpatient Inpatient Drugs Sources : 1) Adapted from Lewis M (2002) p. 196. 2) World Bank (1996, 1997c, 1999b), 3) Balabanova (1999), 4) Boikov and Feeley (1999), 5)Feeley et al. (1999), 6)GUS (1999) and Sari et al. (2000) Source: Lewis, M. Informal health payments in central and eastern Europe and the former Soviet Union: issues, trends and policy implication (11). In addition several anecdotal studies have provided similar information on the underground economy: • An anecdotal study in Turkmenistan revealed that over 50% of the people interviewed paid unofficial charges for health care. Another study conducted in a hospital in Kazakhstan showed that around 45% of hospital expenditure per patient was accounted for by under-the-table payments. Other studies conducted in the economies in transition have revealed under-the-table payments to medical personnel who receive low official salaries. • In Mexico, a recent household budget survey revealed that

private health expenditure as a proportion of GDP was 3.2%, whereas a previous study had provided an estimate of 1.6%. • In Poland, many patients make under-the-table payments to doctors in the state system in order to receive preferential treatment. However, a system of co-payments has been proposed, and it is hoped that this, together with the integration of private services within state-owned facilities, will eliminate the need for the “brown envelopes”. From an economic perspective, the underground economy in health care may be a mechanism bringing demand and supply into a closer relationship in a situation of pervasive disequilibrium. It can also generate important incentives, with both positive and negative consequences, including in the longer term. It is often argued that reforms should be introduced in the financing structure of health services and in the payments made to health care workers to reduce the number of under-the-table payments. In addition, improvements in the quality of services could contribute to eliminating the existing differences. Medical auditing and quality control would also contribute to the minimization of inefficiencies and inequities created by the underground economy. Learning to live with Health Economics III-63 Exercise 3 What are the likely implications of a sizeable underground economy for: • the equity and quality of the delivery of health services • the management and reform of the health care system? How would your response differ in a country where: • the economy is in decline and society is undergoing substantial stress • the economy is growing and society is vibrant and confident? Case study – Russian health reforms Some indicative empirical findings with regard to equity and efficiency The terms equity and efficiency may imply different things to different researchers and policy-makers. It is important then to investigate the current situation in the Russian Federation and identify whether these objectives could be evaluated using the available data sets. In the Russian Federation the objective of social equity was developed theoretically and implemented in a large spectrum of health activities. Under Soviet rule the allocation of resources among the oblasts (regions) was based on a series of norms established by the Semashko research institute in Moscow. The Ministry of Health in Moscow was responsible for health policy development and for the allocation of resources according to predetermined standards (12). The regional administration at oblast level was responsible for implementing the centrally designed policies. Overall the system was primarily concerned with numerical targets without taking into account quality standards and technological improvements. Patient satisfaction tended to be low and much ineffective treatment was reported (13). Clinical and financial management was often lacking at national and regional levels, which led to inefficient utilization of resources. The general impression was that an equitable distribution of resources was achieved in per capita terms, but that the overall system was wasteful and ineffective. There was a need for reform, including a 5 redefinition of objectives. Equity in per capita health expenditure The theory on equity in per capita health expenditure argues that the public sector should have some concern with the allocation of resources on a per capita basis. Le Grand, using data from the 1976 British Household Survey, presented evidence of a roughly equal distribution of health expenditure in the United Kingdom on a per capita basis (14). Similarly, perhaps the per capita distribution of health expenditure in the Russian Federation should be equated with regional needs. Table 2 presents the per capita distribution of public health expenditure per region in the Russian Federation in 1990 and 1993, together with the standardized mortality rates for each region in the two years. It is evident that the most deprived regions receive the lowest per capita public health budgets and that resources are concentrated in the major urban regions. The distribution of per capita health expenditure does not appear to take much account of the variations in the regional needs of the population. Unfortunately, epidemiological studies and clinical surveys are lacking in the Russian Federation, which presents difficulties in conducting a more sophisticated analysis of regional needs and the

degree to which public health expenditure is allocated with reference to them. III - 64 Learning to live with Health Economics Table 2. Health expenditure and health status (1990, 1993, regions of the Russian Federation) Health Health SMR SMR Expenditure Expenditure Crude Crude 1990 1993 1990 1993 Russian Federation 95.52 95.30 11.20 14.50 North Region 117.76 127.67 9.10 13.30 North West 99.02 89.76 12.70 17.90 Central 92.54 96.54 13.00 16.60 Volga 84.94 92.36 11.90 14.60 Chernozemny 84.16 75.01 13.70 16.30 Povolzsky 93.57 88.24 11.00 13.40 Caucases 77.20 57.40 11.10 13.60 Urals 91.06 106.30 10.40 13.80 West Siberia 105.76 113.65 9.60 13.00 East Siberia 103.01 97.97 9.50 13.00 Far East 138.28 152.39 8.20 13.80 Kalinigradskaya 86.44 73.14 9.80 13.50 Equity in health status Several studies have shown the presence of inequalities in health status between social classes, and that they can remain significant over time despite substantial health reforms. In the case of the Russian Federation there are important difficulties. First, mortality data are not available by occupational class. Second, the classification of employment is different from that in some other countries, so that valid comparisons cannot be drawn. Furthermore, social classes in the country cannot be distinguished by occupational groups, because a relatively large segment of the active population has a second job or other activity which is not statistically recorded. The picture becomes even more difficult if account is taken of the black economy (which is relevant under different forms for all socioeconomic groups). Epidemiological studies in the Russian Federation are scarce, and valid comparable data across social classes, sex and age are lacking. Table 3 presents standardized mortality ratios (SMRs) for the ten administrative regions of the country for the years 1990 and 1993. It is worth considering the absolute inequalities (i.e. the levels of SMR per region at a given time) as well as the relative changes over the period 1990–1993. With regard to absolute inequalities there is a change in the hierarchical order of regions. Indexes Health Health SMR SMR expenditure expenditure Crude Crude 1990 1993 1990 1993 Coefficient of Variation 0.165 0.250 0.151 0.108 Logarithmic variance 0.024 0.063 0.023 0.011 Gini Coefficient 0.014 0.010 0.086 0.055 Atkinson 1 0.012 0.030 0.013 0.005 Source: Yfantopoulos (15). Table 3. Health inequality indexes in the Russian Federation Learning to live with Health Economics III- 65 For analytical and empirical purposes some inequality indexes have been estimated, which are shown in Table 3. Each index has specific mathematical properties. Some of the estimated indicators are more sensitive in the measurement of extreme values of the distribution and other indexes are more sensitive in the middle values of the distribution. (Detailed discussion of the advantages and disadvantages of each measure is beyond the scope of this paper.) All four indicators reveal that the inequality in the distribution of per capita health expenditure has increased during the period 1990– 1993. Opposite results are shown with regard to SMR mortality indicators, revealing that inequalities in health status between the Russian regions have been reduced during the period 1990–1993. There appears to be scope here for more detailed research in the area of inequality, which may yield interesting results. The relationship between SMR and health expenditure Auster et al. (16), using cross-section data for the year 1960 across several states in the United States, estimated a negative relationship between SMRs and health expenditure; they also included other variables, such as cigarette consumption. The new analysis here is restricted to a quantitative approach showing the relationship between SMR and health expenditure across the regions of the Russian Federation for the years 1990 and 1993. The estimated linear models for the year 1990 and 1993 are: SMR (1990) = 7.48 – 0.0678 HEX R2 = 0.446 F = 8.86 (7.76) (-2.97) SMR (1993) = 15.83 – 0.0146 HEX R2 = 0.053 F = 0.612 (8.4) (0.78) Health expenditure (HEX) in 1990, was found to be a statistically significant variable (t ratio = 2.97). According to the above estimate, it had a substantial impact on the reduction of SMR. In 1993, the relationship

becomes weaker and not statistically significant. The difference may be attributed (assuming the data are correct) to the transition phase in the market economy having had not only an economic effect, but also serious effects on the production of health. This is supported by the decline in general living standards over the same period and changes in lifestyle and attitudes towards unhealthy habits, such as alcoholism. References 1. SALTMAN, R.B. & FIGUERAS, J., ED. European health care reform: analysis of current strategies. Copenhagen, WHO Regional Office for Europe, 1997 (ISBN 92 890 1336 2). 2. MCKEE, M. & HEALY, J. Hospitals in a challenging Europe. Buckingham, Open University Press, 2001. 3. SALTMAN, R.B. ET AL. Critical challenges for health care reform in Europe. Buckingham, Open University Press, 1998. 4. MOSSIALOS, E. ET AL. Funding health care options in Europe. Buckingham, Open University Press, 2001. 5. SALTMAN, R.B. ET AL. Regulating entrepreneurial behaviour in European health care systems. Buckingham, Open University Press, 2001. 6. MCKEE, M. ET AL. Health care in central Asia. Buckingham, Open University Press, 2001. III - 66 Learning to live with Health Economics 7. MILLS, A. ET AL., ED. Health system decentralization; concepts, issues and country experience. Geneva, World Health Organization, 1990. 8. UNICEF. A decade of transition. The MONEE Project. Florence, United Nations Innocentini Research Centre, 2001. 9. ARROW, K. Uncertainty and the welfare economics of medical care. American economic review, 53(6): 941–973 (1963). 10. World development report 1996: from plan to market. Washington, DC, World Bank, 1996. 11. LEWIS, M. Informal health payments in central and eastern Europe and the former Soviet Union: issues, trends and policy implications. In: Mossialos, E. et al., ed. Funding health care: options for Europe. Buckingham, Open University Press, 2002. 12. Health care in transition: Russia. Copenhagen, WHO Regional Office for Europe, 1999. 13. MCKEE, M. ET AL. Health sector reform in the former Soviet republics of central Asia. International journal of health planning and management, 13: 131–147 (1998). 14. LE GRAND, J. The distribution of public expenditure : the case of health care. Economica, 45: 125–142 (1978). 15. YFANTOPOULOS, Y. Health status inequalities in the post perestroika Russia. Brussels, European Commission, 1998 (Directorate General I. Tacis Programme on Western Siberia). 16. AUSTER, R. ET AL. The production of health: an exploratory study. Journal of human resources, 4: 412–436 (1969). Further reading BORISSOV, V. & RATHWELL, T. Health care reforms in Bulgaria: an initial appraisal. Social science and medicine, 42(11): 1501–1510 (1995). CURTIS, S. ET AL. Health care reforms in Russia: the example of St. Petersburg. Social science and medicine, 40(6): 755–765 (1995). ENSOR, T. Health system reform in former socialist countries of Europe. International journal of health planning and management, 8: 169–187 (1993). FIGUERAS, J. ET AL. Health care systems in southern Europe: is 5 there a Mediterranean paradigm? International journal of health sciences, 5(4): 135–146 (1994). Global health situation: analysis and projection 1950–2025. A health future trend assessment in support of health for all. Geneva, World Health Organization, 1997. Global strategy for health for all. Geneva, World Health Organization, 1997. MENZENTSEVA, E. & RIMACHEVSKAYA, N. The Soviet country profile: health of the USSR population in the 70s and 80s – an approach to a comprehensive analysis. Social science and medicine, 31(8): 867– 877 (1990). MERSIN, E. Russians concerned about increasing private payment for health care. Isvestya, February 14, 1996, p. 97. MILL, A. ET AL. The challenge of health sector reform: what must governments do? Basingstoke, Macmillan, 2001. MUSGRAVE, R. & MUSGRAVE, P. Public finance in theory and practice, 3rd ed. New York, McGrawHill, 1980. PAULY, M.V. Editorial. A re-examination of the meaning and importance of supplier-induced demand. Journal of health economics, 13(3): 369–372 (1994). Learning to live with Health Economics III- 67 ROWLAND, D. & TEYUKOV, A.V. Soviet health care from two perspectives. Health affairs, 10(3): 71–86 (1991). SCEPIN, O. Development and implementation

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environment (e.g. the extent of the underground economy), and the impact these can have on health policy options there at macro- and micro-levels. • Tutors and participants are invited to supplement the references at the end of the module by using the resources and case studies on the website of WHO's European Observatory http:// www.euro.who.int/observatory/TopPage (accessed 6 November 2002). They particularly facilitate the introduction of a comparative element into the training materials. Introduction The process of generating, allocating and managing resources to fund health care raises important questions for policy-makers and planners, who are faced with the challenge of designing and operating systems consistent with broad social policy objectives and compatible with economic realities. The generation of resources to fund health care is subject to macroeconomic constraints, and the allocation of resources to health is guided not only by need, but also by scarcity. The context in which most, if not all, developed countries are operating is characterized by continuous attempts to control rising health care costs and fine-tune health system arrangements and practices. The European economies in transition are operating in similar, though more difficult, conditions. In addition to fine-tuning the systemic operational environment, many countries in the European Region of WHO are faced with an adverse macroeconomic environment and, equally importantly, their health systems are frequently in great need of reform in terms of physical and human capital infrastructure. Adverse macroeconomic conditions imply difficulties in raising adequate resources to fund health care in a sustainable manner and limit the ability of these countries to invest in much needed infrastructure. At the same time, the way in which health care services are financed and health care providers are remunerated often needs considerable change and can be subject to local cultural traditions pertaining to medical practice and the provider–patient relationship. Learning to live with Health Economics III- 71 To provide an analysis of different methodologies of funding health services, allocating resources and remunerating health care providers and goods within a dynamically evolving policy environment, this module combines empirical evidence with theory by providing background in two main areas. First, there is a brief analysis of theoretical concepts, which are important for understanding the complex relationship between health purchasers, providers and patients (e.g. market failures, government failures, quasi-markets and agency relationships in health care). Secondly, the module analyses the interrelationship between the broad objectives of health policy and the tradeoffs that are so frequently required between cost-containment and microeconomic efficiency, equity, quality, responsiveness and choice. It is against this background that the various funding mechanisms at the macro- and microlevels, methods of remunerating providers and allocating resources are analysed. Theoretical
5 concepts Agency relationships In order to understand the complex relationships between purchasers and providers of health care and patients, usually analysed within a principal–agent relationship, it is essential to place them in context. In this respect it is important to identify: • what agency relationships are • how agency relationships work • what the caveats of principal–agent relationships are, and • what a perfect agency relationship is. Analysts stress that there are frequently conflicting interests between principals and agents, and that agents may act on behalf of principals who hold different objectives. For instance, contracted physicians are agents of health insurance funds that reimburse their services and they are also expected to act on behalf of their patients. While the patients may be seeking to maximize their health, the insurance funds may be seeking to minimize costs. The differing objectives of the respective principals are likely to have an impact on the quality (and quantity) of care that is actually provided to individual patients. Information and knowledge are critical for understanding agency relationships in the health care context. For example, the informational asymmetries that can exist in agency relationships often give rise to

the phenomenon of supplier-induced demand. Here, providers use their superior knowledge to influence the patient's demand for health care, for purposes that are influenced by the provider's own self-interest rather than the welfare of the patient. Market failure To address the issue of market failure in health care the reasons for it need to be analysed. This involves, among other things, consumer moral hazard, where "excess" demand is placed on health services because costs to consumers are zero or very low, and provider moral hazard, where the providers do not bear the full cost of their treatment decisions, resulting in potential over-treatment for patients. In addition, there can be significant problems associated with private insurance markets, such as adverse selection arising from information asymmetry. Again, the role of information is central for the analysis of failures in health care markets. III - 72 Learning to live with Health Economics Private markets, however, are not the only ones that fail; and it is important to understand why public provision can also be problematic. This involves consideration of issues such as inefficiency (also referred to as x-inefficiency), where the level of output produced by particular combinations of inputs (say doctors, nurses and high technology equipment) is not as high as it could be; loyalty, which can result in poor quality care continuing to be delivered to patients by health care providers; lack of resources, in total or in terms of distribution; and whether consumers really have the opportunity to exit from unsatisfactory health care facilities and services (especially in the public sector) and exert their consumer power by getting treatment elsewhere (in some cases the alternative may effectively be unavailable to them, for example in terms of location or cost). Quasi-markets As markets are often associated with failures in health care and public provision is not always optimal, quasi-markets have been proposed to encourage competitive relations between providers and a separation of purchasing from provision. In theory, the latter can create an environment where nearmarket decisions and solutions take place. Quasi-markets, in theory, also promote competition between providers which could be based on better quality of services and/or price. In practice, however, there can also be problems with quasi-markets. For instance, competition may not occur in practice, due to a limited number of providers in a given geographical area and the unwillingness of patients to travel further afield for treatment, or the reluctance of health authorities to favour providers outside their geographical borders. There is also the issue of whether an effective purchaser–provider split can take place within a single insurer system. Objectives of health policy All decision-makers have to confront and resolve the identification of health policy objectives and their ranking in order of priority. It is assumed that policy-makers in all health care systems aim to control the total costs of health care (cost-containment, sometimes referred to as macroeconomic efficiency); achieve microeconomic efficiency, in terms of resource allocation; and promote equity. Additional policy objectives are likely to include freedom of choice of provider, quality of the service provided, responsiveness to consumer/patient need, and the overall feasibility of implementing change. Cost-containment The concept of cost-containment, or the total amount of resources spent on health care (usually expressed as a proportion of national resources to GDP), has dominated governments' behaviour in health care systems internationally. Over the past two decades, growth in health care expenditure has exceeded the growth of retail prices, and often the rate of growth of health care spending has exceeded that of other sectors of the economy. Analysis of cost-containment may include: • the income–expenditure identity; • an extension to discuss resource allocation and microeconomic efficiency; • a systems approach to cost-containment; • the extent to which some methods of financing are preferable to achieve this compared with others; and • the conflicts that arise between cost-containment on the one hand and microefficiency and equity on the other. Learning to live with Health Economics III- 73 Microeconomic

efficiency Efficiency at the micro level requires the minimization of opportunity costs and maximization of health benefits. If resources were deployed inefficiently, reallocation would improve the total level of benefit achieved. The costs and benefits of competing health interventions need to be compared and resources allocated to maximize health gains. The efficiency criteria were discussed earlier in module 3.2.2. A distinction should be drawn between allocative and technical efficiency. Allocative efficiency involves the division of scarce resources between competing needs to maximize benefit and, therefore, seeks to determine whether the activity is worth undertaking. Technical efficiency is defined as the production of a good or service at minimum cost. From that one can arrive at the notion of cost– effectiveness, namely the production of health benefits for patients at least cost. Efficiency concepts are precise in terms of economic theory, but measuring efficiency in health care in practice can be difficult. It has been noted that the scientific basis for many health care interventions is weak or unproven (1,2). At the same time, policy standards on efficiency need to be explicit and capable of enforcement. Two main areas captured by the concept of microeconomic efficiency are of special interest here. First, there is the issue of whether resources are being used to their maximum effect in terms of the benefits they generate. In this context, it may be desirable to explore the operationalization and the likely impact of such matters as: how to offer cost-effective treatments, how to reduce wasteful lengths of stay, adopting innovative approaches to health care that reduce costs without reducing quality, and whether by focusing on system efficiency only, unequal access to health care and health inequalities result (and, if so, how can these be counteracted). The second main area concerns the ability to operationalize measures which provide incentives to stakeholders in the health care system, and which encourage them to operate in desirable ways, such as more efficiently, more equitably or more transparently. These approaches through incentives can be compared with approaches that rely more on command and control measures in the delivery of health care and their implications for equity and efficiency in both the immediate term and the longer term. Equity Equity is important on both the financing side and the delivery side. On the financing side the benefit principle is relevant. This requires that those who benefit from a health-related service should pay for it, and that the payment amount should be related to the benefit received. The ability-to-pay principle is also relevant. This requires payment to be organized, not according to the benefit received, but so that individuals pay according to their means. On the delivery side of health care, equity relates to access (the extent to which different social groups and individuals have access to health care facilities and services), geography (relating to the geographical distribution of health resources) and outcomes (relating to differing needs by different social
5 groups). For example, even in highly developed societies such as Australia, Canada, New Zealand, the United States or some of the Scandinavian countries the health care outcomes of indigenous populations are much worse than those for the population as a whole. An additional aspect relates to the trade-off between equity and efficiency. This includes consideration of the ability to benefit from different policy initiatives or practice changes in health III - 74 Learning to live with Health Economics care, which can vary between different social groups. It also includes the many arguments that have been put forward by policy-makers to divert or ration resources between social groups. Quality Improving the quality of health care has several aspects, one of which concerns what might be termed the output of the system, i.e. its impact on the health of the individuals it treats and, through them, its impact on the health of the nation as a whole. Measures of such quality include "throughput measures", such as the number of patients treated, or "input indicators" such as the number of physicians or hospital beds per 1000 population. Another dimension stresses the need for greater attention to the entire structure of the delivery system. In this context, improvements in

quality need to address a wide range of issues relating to the reduction of medical errors; and the overuse, misuse and underuse of medical technology (including pharmaceuticals, devices and procedures). In this context, it can be worth exploring how to reduce uncertainty about decision-making in individual cases and, more broadly, the establishment of criteria for determining the appropriateness of care in particular circumstances and for particular individuals or groups. Swift access to appropriate health care, good procedural management and a pleasant environment may be important process measures. Ultimately, however, it can be argued that quality in health care relates to improvement in health status, and is thus measured as effectiveness. Others might argue, for example in relation to long-term care for the elderly, that the quality of care is as important as cure, the process compared to the eventual outcome. Choice and responsiveness are also surrogate indicators of quality in a given health care system. Choice can be associated with patient choice in selecting a given provider, being entitled to an additional clinical opinion (perhaps at the expense of the taxpayer) or wider aspects of choice. The cost implications of allowing relatively unlimited choice can generate considerable public discussion. Responsiveness reflects the ability of the system to respond to the wide variety of patient needs appropriately, promptly and without undue difficulty. Long waiting lists have been used as one indicator of poor responsiveness. Clearly there can be trade-offs between a highly responsive system and one that focuses more on cost control. Feasibility The feasibility of different systems depends heavily on the country's social, political and economic context, as well as its historical and cultural traditions. Many established systems developed out of particular social conditions and historical circumstances. For example, in central and eastern Europe and the Commonwealth of Independent States, the historical precedent of the Semashko model has influenced the successful establishment of decentralized systems. Political and technical feasibility both need to be analysed when considering health care financing in particular contexts. Political feasibility is mainly concerned with stakeholders, their interests and relative power to influence the successful functioning of the system. It includes such factors as the influence of voters, particular interest and professional groups and providers of health care services compared to health care consumers and citizens more generally. Political feasibility also embraces the notions of affordability and sustainability of the system (both in economic and political terms). For example, is a particular system of funding feasible both in the short and the long run? Learning to live with Health Economics III- 75 Technical feasibility is concerned with the capacity of the country to support and operate a particular financing system for health care. This includes factors such as the structural and administrative capacity within government, the professions and industry. It also includes other factors, such as the development of information systems and the availability of sufficient human resources with appropriate training and skills. All these factors affect the technical feasibility of operating different systems of funding health care. Exercise 1. Objectives of health policy Over the past decade or so health care reform in several European countries has focused heavily on cost-containment. Should the emphasis be on cost-containment or allocative efficiency? Discuss the issues either generally or with a specific focus on one or two countries. How can quality in health care be measured? Discuss various indicators of quality and the tradeoffs that exist between quality, the other objectives of health policy and wider societal objectives. Methods of funding health services This section discusses the relative advantages, disadvantages and problems associated with different methods of funding health care. Each method is discussed separately here, but it is acknowledged that most countries fund health care through a combination of the methods. General taxation A tax-based system is relatively easy to administer, has no risk selection (because everyone is

covered) and no risk-related premiums. It provides stable levels of financing. Where there is global budget capping there tends to be tighter control over total costs compared with other systems for funding health services. Such funding through general taxation can take the form of an integrated model, a command and control model, or a public contract model with several purchasers (in terms of location) and competition between providers. In theory, a monopsony situation12 might be expected to result in good microefficiency; in practice, however, the lack of incentives for providers tends to result in inefficiency (e.g. waiting lists). Tax-based systems are characterized by universal coverage, with the capacity for the principle of equity in delivery to be upheld. Although tax-based systems enjoy considerable public support, for example in Sweden and the United Kingdom, there is rationing (explicit or implicit) of services and frequently a lack of transparency. Increasing health expenditure through rising levels of taxation has become more difficult in many countries, with growing public resistance. Within each country there is, however, considerable variation as to how the taxation system is organized and managed. These variations can have implications for the feasibility of increasing taxes to finance growth in health care expenditure. In tax-financed systems, taxes may be raised centrally or locally, as is the case in Denmark and Sweden. Raising revenue locally may result in higher local visibility and political interest in health care spending. Localized tax-raising powers for health may also result in greater geographical inequities in the level and quality of services provided. Similarly in federal countries, the volume of health care expenditure is influenced by the respective responsibilities for health care and taxation of the different levels of government. It is important to consider the internal efficiency of particular administrative tools and methods of tax collection, i.e. how much does it cost (financially and in terms of political 12 A market situation with only one buyer. resistance) to raise revenue in alternative ways and what impact does the tax have on other production and consumption decisions? Taxes may be levied on earnings, income or expenditure (i.e. a sales tax) with different implications for progressiveness and equity, for savings and investment, and for other decisions by producers and consumers. Another method of raising revenue, hypothecated taxation, has the advantage of visibility. However, it is generally opposed by finance ministries as it can lead to a lack of flexibility at the macro level. Earmarking may be applied in a strong sense (i.e. revenue determines spending) or in a weak sense (i.e. purely formal labelling of expenditure for political visibility). Other variations include the “sin” taxes levied on alcohol and tobacco; in most countries these are not clearly earmarked for health although they form a substantial proportion of tax revenue. There is potential for greater use of hypothecated taxes in European health systems, either as a complement to existing arrangements or as an alternative. Social insurance Social insurance is usually related to a stable source of income, in principle independent of the ministry of health and with fee-for-service payments for providers. Contributions are mainly based on wages and are shared between employers and employees. Nevertheless, there may be important differences relating to: • the uniformity of the rate • the distribution of contributions between employers and employees • the existence of an upper contribution ceiling, and • the existence of additional non-wage-related contributions. Social insurance systems are characterized by a form of competition in that purchasers are separated from providers and there are multiple purchasers and providers. Social insurance systems tend to be characterized by equity in delivery (in terms of need and access), and with the insurance premium based on income, rather than risk. The advantages of social insurance need to be evaluated carefully and balanced against its disadvantages, especially for economies in transition. For instance, social insurance systems have higher administration costs and are relatively more expensive than taxbased systems in terms of total commitment of resources, because doctors commit

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resources in ignorance and there is usually no price sensitivity. Systems of this kind may be associated with moral hazard when combined with a fee-for-service payment system. Social insurance may be unjust in those countries where the parallel economy is a significant proportion of national income. In political terms the practice of raising premiums imposes disadvantages on employers as overall labour costs increase, the export position weakens and inflation rises. France and Germany provide interesting case studies of social insurance systems with a single dominant sickness fund or several funds, respectively. There is considerable variation among different social insurance-based systems. Some countries operate with multiple funds (e.g. the Czech Republics and Slovakia). Others have a single fund (e.g. Croatia, Hungary, Poland) with several regional branches. The experiences of Germany and the Netherlands in the organization of funds and the potential for the introduction of competition between funds are worth examining. In the Netherlands, where the multiple insurance funds have started to compete with each other, attempts have been made to allocate resources to insurers on a capitation formula based on their age and gender and the location of their membership. These risk-adjusted Learning to live with Health Economics III- 77 payments are intended to reduce the incentives for cream-skimming. However, the problems of calculating individual risk mean that, on the whole, these risk-adjusted payments have not been successful. There are also questions relating to what choice of fund exists for consumers in different countries, and the level of collusion and/or competition that actually exists between “competitive” insurance funds. It can be argued that social insurance is effectively an earmarked tax, and in this case revenue is determined by the level of contributions, usually set as a percentage of earnings. This means that revenue levels fall during an economic recession. In order to meet rising expenditure, levels of contribution would have to be raised, but as is the case in tax-financed systems, public resistance to this is strong. Part of the burden of payment in social insurance-based systems tends to fall on the employer and this could be a possible source of economic inefficiency, affecting productivity adversely (and levels of external investment). Increases in insurance contributions may also be passed on to the employee in the form of lower wages (or unemployment). Voluntary, supplementary and private health insurance In most countries, voluntary or private health insurance exists in parallel with statutory health insurance systems. In some countries, the top decile or quartile of the population may be (voluntarily) excluded from social insurance and contract their own private insurance. The fundamental difference between social insurance and voluntary health insurance lies in that the former pools risks across the whole of society and the insurance premium is income-related, whereas the latter covers only part of the population and the insurance premium is arranged on an actuarial basis. The advantages and disadvantages of voluntary health insurance need to be explored vis-à-vis the different agents in the system: payer, provider and consumer. The cost of the system and the potentially inequitable access to services resulting from voluntary health insurance may have to be counterbalanced against increased choice for consumers, greater quality and responsiveness, more flexibility and sharper incentives to efficiency. Moral hazard and adverse selection are two key problems of a voluntary insurance system, together with high administration costs. The Netherlands, the United Kingdom and the United States provide interesting examples of private insurance funding in addition to statutory social health insurance (the Netherlands), universal health coverage through taxation (United Kingdom) or as the main means of obtaining health insurance (United States). Private insurance markets operate differently in different countries. In some countries, such as Switzerland, they are the predominant system of financing under a compulsory system. In other countries, such as the United States, they are the predominant means of financing under a

voluntary, employer-based system. In addition, there are different types of voluntary insurance, not necessarily provided privately. There may be voluntary insurance as cover for those who are ineligible or choose to opt out of the public universal system. In such circumstances the voluntary insurance is a substitute for statutory health insurance (e.g. Germany, Ireland and the Netherlands). Voluntary insurance can also be a secondary supplementary form of cover in predominantly publicly-financed systems provided by nonprofit or for-profit organizations. Insurance offered by the mutualités in Belgium and mutuelles in France for co-payments, and extra cover for better quality hospital facilities and quicker treatment for elective surgery, as offered in the United Kingdom, illustrate this situation. III - 78 Learning to live with Health Economics Hypothecated taxation Hypothecated taxation is a form of social insurance, and offers an alternative method of financing health services. Two alternatives exist. The first alternative involves taxing incomes and earmarking the resulting revenues specifically for health services. The other alternative relates to the taxation of goods classed as "bads", such as tobacco and alcohol ("sin" taxes). Hypothecated taxation has advantages if consumers dislike paying taxes in general, but are willing to pay higher taxes specifically for the health service (3). The revenue raised from hypothecated taxation can be used for specific health services or for the health service in general. The proceedings from hypothecated taxation may be heavily dependent on consumption patterns and the overall rate of growth in the economy. Earnings from hypothecated taxation may therefore fall considerably in times of economic recession and increase in times of economic recovery. If so, the fluctuation in the available funds would not provide a solid base for long-term financing of health services. There may also be equity issues if the hypothecated tax falls especially heavily on those who are disadvantaged, e.g. the poor, the ill educated or those living in disadvantaged regions. The implementation of hypothecated taxation may be subject to two important technicalities. First, policy-makers need to ensure fairness in that contributions should be levied across the whole range of incomes and that those with lower incomes pay no more proportionately than those with high incomes. Secondly, if health care necessitates the redistribution of income not only across time, but also between high- and low-risk groups in the population (e.g. the unemployed), policy-makers should ask themselves whether a hypothecated tax is the best way of effecting such redistribution. Medical savings accounts Medical savings accounts (MSAs) have been proposed as a way to avoid some of the problems of voluntary health insurance, especially adverse selection. MSAs are a system whereby funds are placed in a personal savings account from which the individual can draw to meet medical expenses up to the amount in the account. MSAs have advantages and disadvantages that are similar to those of voluntary health
5 insurance, except for adverse selection. It is a system that encourages choice of provider by the consumer. MSAs also present unique challenges to policy-makers regarding their implementation for the benefit of consumers. Thus, monitoring of payments must be safeguarded, particularly in economies with high unemployment and a significant underground economy. Funds must be invested so that the best yields to individual savings can be achieved. While this necessitates developed capital markets, it also requires regulation regarding the types of investment made (e.g. in terms of risk pursued). Competition may have to be fostered in order to reduce over-reliance on an institutional investor, increase the pool of available investment opportunities and promote stability. At the other end of the spectrum, if several funds are permitted, then marketing costs may increase. Analysis of the technical feasibility of medical savings accounts has been extensive. However, less attention has been paid to the implications of the lack of universal risk pooling or any redistributive effect between high and low risks and between high- and low-income contributors. Such assessments of MSAs should include analysis of the feasibility of managing the investments and the problems

experienced with low-yield government bonds compared to higher-yielding but higher-risk private investments. Other concerns include the possible need for additional catastrophe insurance (called Learning to live with Health Economics III- 79 Medishield in Singapore); the degree to which MSAs are appropriate for preventive care; and the mechanisms for dealing with bankruptcy, financial underwriting and funds management. User charges Another significant contribution to the funding of health care is the range of formal and informal outof-pocket payments. Direct charges to the consumer or patient are increasingly common in many European countries, either in the form of co-payments and deductibles in insurance markets or out-ofpocket payments. The debate about user charges is quite old. Considerable arguments exist in favour of user charges: they bring in more revenue, make patients more cost-conscious and deter frivolous demand. Arguments also exist against them: they hit the poorest hardest (and therefore are against the principle of equal treatment for equal need), and are liable to have perverse effects on costs and health care outcomes by deterring people from seeking early treatment and discouraging preventive medicine. Delayed care may even prove to increase health costs. Policy-makers can consider different types of user charges, ranging from patient co-payments, co-insurance and flat rates to deductibles (or a combination of them). Although the revenue yield, incidence and equity implications of each method varies considerably, policy-makers need to consider the services to which user charges apply, the level of user charges and exemptions from user charges, due, for example, to chronic illness, age, income level, or a combination of these factors. The evidence suggests that unless user charges are carefully set they may deter genuine need, especially among low-income and other disadvantaged groups, raising concerns about equity and the impact on health gain. The suggestion that equity problems could be overcome through exemptions has been found to be quite difficult to implement in practice. Evidence from the RAND health insurance experiment showed a relationship between increased out-of-pocket payments and reduced drug consumption and medical care utilization, though the methodology employed has been criticized. The role of the underground economy The extent of the underground economy can have a significant impact on the ability of countries to fund their health services. First, it can result in statutory insurance contributions or taxes not being paid. This affects the financial resources from which health care facilities and services are provided. The tax authorities cannot obtain some revenues, due to their underground nature. Such activities may be legal, for instance, a second job the income from which is not declared to the authorities; or illegal, such as drug trafficking and prostitution. There may also be systemic difficulties and weaknesses in identifying sources of revenue and collecting the respective contributions. Economies with large agricultural sectors, which can also be characterized by cyclical events which affect revenue-raising capacity, and large self-employed populations, tend to face particular difficulties in this regard. Second, there can be problems arising from under-the-table and, therefore, illegal, payments to health care providers. Such payments can form part of the local culture and have become institutionalized in several countries. Doctors can come to view such payments as a legitimate means of supplementing their income, especially if other sources, such as health insurance funds and the public authorities, pay them relatively little. From a policy-making perspective, it is important to discuss ways of counteracting the above. III - 80 Learning to live with Health Economics Exercise 2. Methods of funding Outline the main advantages and disadvantages of the various methods of funding health services, noting: 1. the criteria being applied in comparing them, and 2. the context in which the funding methods are to be applied. Outline the main advantages and disadvantages: 1. in theory, and 2. in the context of a particular European country. Methods of remunerating providers of health goods and services

Remunerating doctors How different providers in the health care system are paid can have a significant impact on their behaviour and, therefore, on the achievement of the objectives of the health care system. The central economic problem inherent in devising a payment system is to provide the right incentives (or disincentives) to encourage (or discourage) certain types of behaviour, and therefore allow stated objectives to be pursued (4). This part of the module discusses the incentive structures for physicians; the agency relationship between themselves, payers and patients; and the issue of supplier-induced demand and the circumstances under which it occurs. Three main methods of paying doctors and other health care professionals are identified: feefor-service, salary and capitation. The resource-based relative value scale methodology used under Medicare in the United States and the relative value scale of fees in Germany highlight some of the problems associated with over-servicing. • The perverse incentives present in fee-for-service payment systems limit the achievement of cost-containment and efficiency. If a fee-for-service system is implemented, additional regulation is likely to be required as well to limit activity, e.g. the resource-based relative value scale, which reduces the value of the fee as activity increases. The issue of bureaucracy and associated transaction costs also needs to be considered. • Salary payments do not contain incentives to overtreat, but may contain incentives to undertreat or shift costs. Hospital doctors paid on a salary basis may choose, with a given availability of beds, to have a longer average length of stay, thereby reducing overall workload, rather than encourage faster throughput, which would increase work without increasing income (4). • Capitation at primary care level and fee-for-service at secondary level provides a built-in incentive for over-referral. The implications of cost shifting and referrals to other levels of care should thus be considered when designing payment systems. Incentives (financial and non-financial) affect the behaviour of health care professionals, and this behaviour is likely to affect cost control, equity and efficiency. Salary payments, for instance, facilitate cost control but may not contain incentives for efficiency. Fee-for-service payments can increase efficiency, if activities are well defined and desirable, but they can also lead to incentives to overtreat and, therefore, to cost inflation. Learning to live with Health Economics III- 81 Some countries, such as Germany and the United Kingdom, have adopted systems of budgetholding for physicians, to encourage cost-consciousness, either by directly manipulating their income or by allowing any budget surplus to be retained within a practice and used for the benefit of patients. France has adopted a controlled fee-for-service system; Germany has preferred a fee-for-service system that incorporates an inverse relationship between individual fee levels and the volume of the relevant service; and the United Kingdom uses capitation payments. The enforcement of regulations also requires consideration.
5 An unenforceable regulation is equivalent to no regulation. Societies that have a large underground economy, for example, may tend not to be notable for their effective enforcement of efficient and equitable regulations. Remunerating hospitals As is the case with physicians, there are several methods of paying hospitals. Each alternative payment mechanism can create different incentives for the service provider, and the effects observed will be influenced also by local, non-monetary incentives. This section discusses the mechanics of the alternative systems in the light of incentives that are prevalent in each system of payment and in relation to the broad objectives of health policy, namely equity, micro-efficiency, quality and costcontrol. There are two broad methods of paying for hospital services: retrospective remuneration (usually on a fee-for-service basis), and prospective remuneration, which can be done either through overall prospective budgeting or prospective budgeting by individual cases. Retrospective payment exists when the payment is determined and agreed after the services have been provided. Charges are usually calculated on a fee-for-service basis. They do not necessarily reflect costs if there is cross-subsidization

within the hospital finance system. In these systems, a charge may be invoiced for every service provided, or there may be "bundling" of service units, with payments being provided for the overall group of services as a whole. The key feature of retrospective fee-for-service as a reimbursement mechanism is that there are few incentives for efficiency and costminimization. Providers can maximize their revenue and profits by increasing the volume of their activities, i.e. by providing more services. In a prospective payment system, payment per case is determined in advance of the services being provided. This can be done by global budgeting or on a per case basis. Global budgeting is defined as an overall constraint imposed, nearly always prospectively, on providers, limiting the price and the quantity of services provided. Provider payments are agreed in advance, and designed to cover expenditure on a range of services during a fixed period of time. Global budgets are a relatively straightforward method of budgeting and allow local managers to be flexible about the use of resources and the methods of giving care, while removing the incentive to maximize certain types of input (such as the number of beds). Where possible, it is desirable to link budgets to capitation rather than to historical levels of activity. Assuming that budgets are fixed, global budgeting may be an efficient means of cost-containment (5). However, there are potential inefficiencies associated with global budgeting, such as incentives to minimize resource use and to cut costs at the expense of quality. Contracts should therefore specify quality standards, at least in terms of process if it is too difficult to contract for outcomes, and these standards should be monitored closely. A variant of global budgeting is line item budgeting, which exists when providers are given a fixed budget for specific cost items, such as staff, food, laundry, drugs and maintenance. Line item budgeting is always more difficult for managers than global budgeting, since it limits their capacity to reallocate resources in the light of emerging needs, new knowledge or changing priorities. III - 82 Learning to live with Health Economics Prospective payment by case is determined in advance of the services being provided. The care provided has therefore to be paid for out of a predetermined charge per case, with the payment rates for each type of case being determined in advance. Patients are categorized into an illness or disease category to facilitate billing and reimbursement. The use of diagnostic-related groups (DRGs) in the United States and similar methodologies elsewhere are important examples of per case prospective reimbursement. Significant issues arise from the pricing of services, activity volumes, reimbursement negotiations between purchasers and providers and the regulatory requirements for setting up a DRG system. Particularly from a longer-term perspective, the DRG approach can reduce the incentives to maximize treatment, shorten lengths of stay and reduce the number of diagnostic tests that are undertaken. However, DRGs can also have perverse incentives, such as cost-shifting, changes in the pattern of care, case-mix selection, DRG creep, and the potential effects on outcomes arising from earlier patient discharge. Paying for pharmaceuticals Pharmaceutical policy brings together different elements of public policy, namely health policy and industrial policy. It also brings together a wide range of agents in the organization and delivery of health services, such as the statutory insurer, the treasury, the ministry of health, the physician, the pharmacist, the wholesaler, the industry and the patient. Health policy is involved in pharmaceuticals since safe, efficacious and effective drugs are needed to treat different conditions. The commercial interests of the pharmaceutical industry enter the debate regarding the availability and affordability of medicines and of the industry's promotion of jobs, exports and, where applicable, research and development. The cost of pharmaceuticals is an important element of health policy, particularly as the proportion of pharmaceuticals in total health spending has been rising. In this respect, pharmaceutical policy comprises elements of supply-side control, proxy demand-

side control, and demand-side regulation. The discussion here comprises a critical appraisal of supply-side, proxy demand-side and demandside measures which influence pharmaceutical expenditure; and their implications for cost-containment, efficiency and quality. Supply-side measures include, mainly, the following: • methods of price or profit regulation applying to pharmaceutical products and their relative merits for health policy and industrial policy (e.g. free pricing, average pricing, international price comparisons, profit controls, reference pricing, compulsory price reductions after an initial control-free period, cost-plus pricing or basic cost pricing); • the establishment of (positive and/or negative) lists and formularies as part of reimbursement policy and consideration of their implications for cost-containment, quality and efficiency; • the use of economic criteria in either pricing or reimbursement, such as requiring adequate evidence on cost–effectiveness before listing new pharmaceuticals on the schedule for public reimbursement (as in Australia and the Canadian Province of Ontario); • direct controls on pharmaceutical manufacturers, such as controlling advertising outlays and detailing;13 • examination of industrial policy considerations, such as incentives for pharmaceutical firms to locate in certain countries. 13 See Module 4.2.1, under "A tool for understanding the implementation of clinical policy", for an explanation of this term. Learning to live with Health Economics III- 83 Proxy demand-side measures seek to influence agents acting on behalf of patients, namely physicians and pharmacists. These can be analysed in detail from the perspective of cost-containment, efficiency and health care quality. Measures applying to physicians include, among other things: • the possibility of managing budgets (both overall budgets for their patients or pharmaceutical budgets, providing that either of them are "hard"); the measures can incorporate incentives (e.g. to keep savings) or penalties (e.g. pay any excess back to the insurance fund); • policies to prescribe generically, as well as policies that influence the prescribing behaviour of physicians through practice guidelines, vignettes for good clinical practice and prescription monitoring through information systems; • the method of remunerating physicians can also affect their prescribing behaviour (and can be associated with supplier-induced demand). Measures applying to the behaviour of dispensing pharmacists include: • incentives for generic substitution – remuneration methods need to be examined in this context, including the extent to which they are progressive, regressive or a flat fee; • overall policies that encourage generic substitution – here, the overall relationship between physicians and pharmacists can be particularly important; • the role of pharmacists in the community – the advisory role of the pharmacist is significant in some European countries, and in several countries of central and eastern Europe patients can acquire medications without a prescription. Demand-side measures comprise action on the consumer of pharmaceutical products.
5 These include: • cost-sharing and its variations, including the implications of different cost-sharing methods for equity, efficiency and revenue-raising capability; • switching certain products to over-the-counter status, where there are issues relating to consumer safety and the possible requirement to amend existing regulatory frameworks; • launching health promotion campaigns, which includes consideration of the health areas and target groups where such campaigns can best be focused, together with their medium- to longerterm results. Exercise 3. Remunerating providers Outline the various methods of remunerating those who provide health care services (such as health workers, health institutions or pharmacists); the incentives or disincentives the remuneration methods establish to encourage desirable behaviour or to achieve health goals; and how monitoring, evaluation, learning and progressive improvement can be encouraged. Consider the methods of remuneration used in your country, the degree to which such approaches are determined solely by reference to factors within the health care system, and how the remuneration methods might be improved. Allocating resources The discussion in this section

relates to discussion in other modules, such as 2.3.2, which presented a conceptual framework for considering possible reallocation of resources for health. III - 84 Learning to live with Health Economics Budget allocation formulae Allocating resources is a crucial issue in the organization and delivery of health services. Often, incremental financing decisions perpetuate historical inequalities and serve political rather than health needs. When resources are being allocated, consideration should be given to the resulting incentives and their longer-term implications at each level of decision-making: central, regional, and local. An equitable budget allocation formula could be capitation-weighted and risk-adjusted by measures of relative need, including consideration of variations in mortality, morbidity, costs, income, employment and age. Resource allocation and purchaser–provider split There has been a tendency in some countries for state-financed health care systems to redirect their policy focus from cost-containment (which they can achieve through global budget control) to the improvement of efficiency. Purchasers in this respect are faced with two tasks. Their first task is to identify what actually works, namely what interventions are efficacious (shown to improve patient health status in carefully designed randomized controlled trials), which interventions are effective (those which improve patient health status when used in routine medical practice) and which interventions are efficient (those which maximize improvements in health status at least cost). The role of information, its availability and an evidence-based medicine approach are critical for ensuring that this first task is fulfilled. The second task facing the purchasers is to induce health care providers, particularly physicians, to review their practices, change them where appropriate and deliver care as efficiently as possible. Information needs for efficient purchasing Information systems are essential for the effective delivery of health services to a given population. The efficient purchaser needs to invest in the development of the following skills: • appraisal of population health needs and their ranking in relation to the availability of costeffective interventions; • monitoring of activity rates and outcomes by institution and clinician and the reduction of inefficient variations; • monitoring of the costs of provision by contracted providers and their rivals; and • design of incentive-compatible contracts that encourage providers to behave efficiently, to respond to changing needs and to adjust in appropriate and sustainable ways over the longer term. Exercise 4. Funding health services In evaluating various options for health care funding in a particular country, how might the historical context and political, cultural and economic factors influence the choices that are made? Consider an actual case or a hypothetical example. Four implications First, there are many objectives of health policy, including cost-containment, microeconomic efficiency, quality, feasibility, choice and responsiveness. These objectives, all of which are desirable in most societies, can also be in conflict. Thus, various choices generally have to be made in seeking to satisfy the overall objectives for a particular society. Learning to live with Health Economics III- 85 Secondly, there are various methods of financing health services, such as general taxation, social insurance or user charges. There are various methods of paying providers, such as doctors, hospitals and the providers of pharmaceuticals. And there are various methods of allocating resources, including budget allocation formulae, a purchaser–provider split and evidence-based approaches. Thirdly, each method of finance, payment and resource allocation has advantages and disadvantages; is more suitable for some circumstances than others; and generates incentives to act in particular ways. Also, there are interactions between the method of funding, the purchasing agents and the providers of health care. Finally, in all health systems a balance has to be struck which enables three objectives to be achieved, either wholly or in part. The first objective is allocation, so that the cost-effective production and procurement of appropriate health goods and services are achieved. The second

objective is to achieve an equitable distribution of health-producing goods and services. Relevant considerations here include fair financing, fair access to health goods and services, and fair payment to providers. The third objective relates to sustainable development over the longer term. This element includes sustaining development by the fostering of appropriate policies, continuous learning and the management of change; securing the necessary resource requirements for the health system on a continuing basis; and building in powerful incentives for the improvement of performance and health. While all three objectives tend to be judged as desirable in all societies, the balance to be struck between them, and the reasons for doing so, can vary widely.

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3.4.2 Privatization – overview of issues Greg Stoddart14 Key messages • The term "privatization" can refer to several different economic functions which occur in health care systems: (i) ownership of facilities and delivery of services, (ii) financing, (iii) management, (iv) administration, (v) regulation and (vi) provision of information. When using the term it is important to point out clearly which functions are involved. · The functions above are only the means by which countries attempt to achieve important policy objectives or ends, such as improved health outcomes, equity in access to and payment for health services, efficiency in health service delivery, provider and patient satisfaction, and overall expenditure control. The choice of ends requires that important value judgements be made, and these may differ across societies. There is no single "best" way to organize and finance health care systems that "wins" on all performance criteria. All systems have their strengths and their weaknesses. • More than ever, the public versus private debate in health care policy is becoming

blurred by new models of public/private partnership. It is increasingly necessary to conduct analyses not at the level of stereotypes but at the level of specific policy proposals with clearly identified policy objectives. Tutors' notes This is always a controversial topic, and one of the important roles of the tutor here is to separate issues of evidence from those that are matters of value judgement (not always a simple task!). 14 This module was prepared by Professor Greg Stoddart from the Centre for Health Economics and Policy Analysis, McMaster University, Canada (e-mail: stoddart@mcmaster.ca). Learning to live with Health Economics III- 87 The main purpose of the module is to encourage students to think more carefully about what privatization means in the context of any specific policy proposals that may be occurring in their countries. The purpose is not to argue for or against privatization either factually or ideologically. Much will depend on the underlying social values in the country (it is worth noting that these may differ from those of the analyst) and the specific policy goals being pursued. For example, it does not appear from international experience that privatization of financing assists with control of expenditure – indeed, the opposite seems to be the case; on the other hand, if the policy concern is how to increase the incomes and satisfaction of health care providers – an important issue in many of the economies in transition – then increased privatization of financing may be an effective policy. In all cases, it will also be necessary to examine the impact of the policy on other goals, such as efficiency and equity. The module could be used at all three levels of skill development, depending on the audience. For those who are relatively unfamiliar with the debate or who are heavily involved in the politics of the debate, the module may increase their appreciation of some of the subtleties and complexity. For those such as bureaucratic staff in health ministries, who have responsibilities for policy development or policy advice, the increased attention to specifying the function and objectives associated with privatization proposals may assist with appraisal and analysis activities. There will probably be no shortage of examples or cases from the students' own countries for Exercise 1, but if tutors prefer, they may wish to use examples from European health care reform: analysis of current strategies (1). During discussions in the development of the module it was suggested that the case of the Netherlands might be a particularly interesting example, with merged public and private insurance systems. Introduction Everywhere in the world, countries struggle with finding the appropriate public/private mix in their health care systems. Even though debates on this subject are often intense, the meaning of the phrase "public/private mix" is often unclear and frequently misunderstood. Similarly, "privatization" of health care systems is a term that is often used without a clear definition of its meaning. Several complex functions go on inside a health care system, and the public/private mix may be different for each. Indeed, not only is it clear that the stereotypical extremes of purely public and purely private systems are in practice meaningless, it is now also the case that some analysts feel that the complexity of relationships inside health care systems make simple public/private distinctions all but impossible. The purpose of this brief module is to improve the clarity of discussions about privatization by (i) distinguishing different functions and activities to which the term may be applied, (ii) discussing how privatization relates to another frequently used term, "competition" and (iii) illustrating the complexity of making public/private distinctions in some recent cases of health care reform. The module is not intended to provide policy advice. There is no single best way to structure health care systems that is the clear winner on all performance criteria which may be relevant. Moreover, decisions about the structure and operation of health care systems inherently involve value judgements about social goals; each country must make these political judgements within its own culture. There is, however, an extensive body of international experience with different public/private mixes, and some of the key

insights from this experience are included in the module. III - 88 Learning to live with Health Economics The module begins with a discussion of six important types of function or activity that occur within health care systems, and notes that each may contain both public and private elements. It then illustrates the complexity of the public/private distinction through discussion of several key issues in common health care reforms. The module concludes with a discussion exercise animated by a set of summary propositions offered by one international expert on the economics of health care reform. Discussion To label an entire health care system as "public" or "private" is impossible, because systems contain many different types of functions, each of which may be public, private or mixed public/private. Following a taxonomy used in Canada by Professors Greg Stoddart and Roberta Labelle (2), it is possible to identify six distinct economic functions which occur in health care systems: • ownership of facilities and delivery of services • financing • management • administration • regulation • provision of information. Each of these may contain a mixture of public and private elements. Hospitals, clinics, physician practices, laboratories, long-term care facilities and even ambulance services are examples of facilities which are privately owned and operated in some countries but not in others. Even within one country there may be a mixture of types of ownership. (Furthermore, although private ownership implies private delivery of services, public ownership does not rule out some private delivery of services, for example in a situation in which private physicians use public hospital facilities.) Financing – i.e. raising the revenues for the health care system and the terms and conditions implied in that process – also frequently includes a mixture of public and private sources, ranging from taxation (personal income, corporate income, sales and excise, etc.) and social insurance on the public side to private insurance and direct charges (including under-the-table payments) on the private side. The term "management" is used here in its broadest sense, to refer to activities of strategic planning, policy-making and decision-taking that define the direction of health care systems. Again, this may occur in agencies or departments of governments or in the executive offices of private firms, or both. The term "administration" is used here to denote the daily activities required to carry out and implement management decisions. Some aspects of publicly-financed systems may be administered privately, as is the case if the claims processing activity for a public health care insurance system is contracted out to a private firm. Regulation, i.e. the setting of rules, usually embodied in legislation, is most often associated with governments, but here too there can be private elements, as in the practice guidelines which international for-profit hospital chains require their clinical employees to follow. Finally, the provision of information about the cost, effectiveness, necessity and availability of health services is an activity which occurs both publicly and privately in most

5 health care systems. Learning to live with Health Economics III- 89 These functions are the means by which countries attempt to achieve important policy objectives or ends, such as improved health outcomes, equity in access to and payment for health services, efficiency in the delivery of health services, overall control of expenditure, and patient and provider satisfaction. Therefore the challenge facing each country is to find the mix of public and private activity both within and across these functions that best achieves its ends, a daunting task when one considers the number of different services to be provided in any health care system. It is important, however, to recognize that privatization (of any function) is only a means; it is not an end in itself. In each specific case of privatization it is important to ask the questions: "What goal will privatization achieve?" and "Are there more cost-effective alternatives than privatization for achieving this goal?". One important theme that emerges from the international experience is that public versus private ownership of facilities and delivery of services may be one of the less important aspects of the debate, especially when compared to the financing, management and regulation functions. These latter

functions contain the capacity to define critical terms and conditions on which health care systems will operate (e.g. universal coverage of the population, supply of health professionals, standards of quality and cost–effectiveness), regardless of whether the services are delivered by public or private employees in public or private facilities. The financing, management and regulation of health care systems can provide the control over expenditure and utilization patterns which appears to be necessary for the achievement of public policy objectives. All models for organizing health care systems have their respective advantages and disadvantages, however. While private ownership and service delivery are often associated with greater flexibility, adaptability and innovation, when services are delivered privately the motivation of those making management decisions is an important consideration. Private firms which operate on a for-profit basis can be expected to behave differently from those operated on a non-profit basis. Again, the structure of the management function is more important than the ownership function itself. This is not meant to imply that the motivation of public managers, who face no profit motives, is unimportant. Indeed, relating reward to performance is perhaps even more difficult in the public sector, especially in large bureaucracies which may lack flexibility in labour agreements or have difficulty maintaining managerial skills and training. However, the for-profit motivation typically conflicts with public ends, at least in the provision of clinical rather than non-clinical services. Similarly, different financing models each raise their own sets of issues. Financing through private insurance or direct charges is highly regressive, placing a disproportionate burden of the cost of health care, relative to income, on the poor, and creating significant problems for access to services. International experience also suggests that this model has difficulty controlling overall health care expenditure. Tax-based public financing performs much better on expenditure control and in most countries is mildly progressive. It does, however, create a constant political debate between governments and health care providers over the appropriate level of services (and incomes), since governments must live within their means as provided by the growth and performance of their economies. This model also requires an effective tax collection system, which can be a problem in some countries. Social insurance models of public financing are a common alternative to tax-based models and also perform relatively well on expenditure control (though not quite as well as tax-based models, it appears). They are frequently employment-based and can be regressive if workers' contributions are III - 90 Learning to live with Health Economics a fixed proportion of earnings up to some limit, as is typically the case. They may also be less transparent than tax-based systems, which seem to be constantly under scrutiny, and some analysts feel that this may undermine the incentive for cost-effective management. In view of this array of performance characteristics of different models of financing and ownership/ delivery, countries proposing to change from one model to another must be particularly careful to examine the potential for new problems. For example, a move from a tax-financed to a social insurance model may increase the need for managerial and actuarial skills. A move to private insurance from either tax-finance or social insurance may require government to initiate supplementary coverage to address equity and access concerns. A move from a public to a parallel public and private delivery system will require new policies to govern physicians and to prevent physicians working in both systems from directing public patients to their own private practices. Each situation will be different; it is important to realize, however, that there are no simple solutions to the question of how to structure health care systems. Another theme which emerges is that it is a dangerous oversimplification to equate "private" with "competition". The words "private" and "public" refer to a status. Competition is a process. "Private" does not imply "competition", as illustrated by the existence of private monopolies. Nor does "competition" imply "private".

Competition may be used within the publicly-owned and/or - financed components of systems as well as in the private components, or indeed between the two components. As Professor Richard Saltman and WHO policy analyst Josef Figueras have pointed out (1), competition is most successful in advancing public ends when it is focused directly on and restricted to the supply side (contracting non-clinical services, performance contracts for clinical service providers, substitution in pharmaceuticals, etc.). It is problematic when focused on individual patients, making treatment or insurance coverage choices as if they were consumers of other everyday products on which they are typically much better able to inform themselves. Nevertheless, given the present state of limited knowledge in this area, it should be acknowledged that it is difficult to draw any definitive conclusions, and that value judgements about the relative merit of different policy objectives will heavily influence any conclusions which are drawn. A third theme, which emerges from recent health care reforms in several countries that have created purchaser-provider splits, is that the complexity of modern health care systems renders it sometimes impossible to make public/private distinctions. In some cases, the difficulty lies in deciding how and whether to apply the term “public” to purchasing bodies which may be quasi-public, nongovernmental organizations or corporations operated on a non-profit basis. In other cases the public and private elements are interdependent, even within a service category. There is a variety of purchaser–provider ownership models. Further, complexity arises from the public/private arrangements made in capital markets to finance new facilities; for example, joint-venture models involving public/ private cooperation are increasingly being used to add new facilities or augment and update old ones (3). The result of recent trends is that, more than ever, the public versus private debate in health care policy needs to be carried on at the level of specific policy proposals, judged against explicit social policy objectives. It is only at this level of detailed analysis that some of the newer, more complex proposals may be fully understood. “Public versus private” is not a particularly clear or helpful way in which to frame current policy debates; rather these debates should focus on performance. Learning to live with Health Economics III- 91 Exercise 1 Identify one policy option in your country which involves “privatization” of the health care system. Which of the six functions described in this module does it involve? Give your view (and the reasons for it) of how the policy would perform on the criteria of: • improved health outcomes • equity in access to and payment for health services • efficiency in the delivery of health services • overall control of expenditure • patient and provider satisfaction. Exercise 2 Privatization (especially in relation to the financing function) is sometimes linked closely with marketbased reforms. Annex 1 presents eight summary propositions about such reforms from an article by Professor
5 Robert Evans (4). Do you agree or disagree with Professor Evans? Use the propositions as the basis for a discussion of the status of market-based reforms in your own country. Under which conditions do you think countries can introduce market systems? What evidence is there for your answer? What objectives are best achieved by market systems? What value judgements are involved in decisions about market systems? Note: For an audience familiar with the concept introduced in Module 3.3.1: The expenditure ≡ income ≡ revenue framework, Annex 2 may be used to illustrate key issues. Annex 1. Summary propositions from Going for the gold: the re-distributive agenda behind market-based health care reform by Robert G. Evans Summary propositions 1. There is in health care no “private, competitive market” of the form described in the economics textbooks anywhere in the world. There never has been, and inherent characteristics of health and health care make it impossible that there ever could be. Public and private activities have always been interwoven. 2. The persistent interest in an imaginary private competitive market is sustained by distributional objectives. These define three axes of conflict: (i) the progressivity or regressivity

of the health care funding system: who has to pay, and how much? (ii) the relative incomes of providers: who gets paid, and how much? (iii) the terms of access to care: can those with greater resources buy “better” services? 3. The real policy choices fall into two categories: (i) the extent of use of market-like mechanisms within publicly funded health care systems; (ii) the extent to which certain services may be funded outside the public sector, through quasi-markets, and under a mix of public and private regulation. III - 92 Learning to live with Health Economics 4. Proposals to shift towards more use of quasi-markets through the extension of private funding mechanisms are driven by distributive considerations. They reflect the fact that, compared with public funding systems, privately regulated quasi-markets have to date been: (i) less successful in controlling prices and limiting the supply of services (more jobs and higher incomes for suppliers); (ii) supported through more regressive funding sources (the healthy and wealthy pay less, and the ill and wealthy get preferential access); (ii) off-budget for governments (cost-shifting in the economy looks like cost-saving in the public sector). 5. Market-like mechanisms within publicly-funded health care systems constitute a particular set of management tools that might be used along with other more established mechanisms to promote the following generally accepted social objectives: (i) effective health care, efficiently provided and equitably distributed across the population according to need; (ii) fair but not excessive reimbursement of providers; and (iii) equitable distribution of the burden of contributions according to ability to pay, within an overall expenditure envelope that is consistent with the carrying capacity of the general economy, or rather of its members’ collective willingness to pay. 6. These general objectives seem to be widely shared internationally. Their specific content is of course much more controversial: they are fundamentally political statements and, as usual, God and the devil are in the details. But the key point is that these social objectives have their origins prior to, and at a higher level than, the choice of any particular set of mechanisms for trying to attain them. They are ends; the mix and blend of public and private actions are means to those ends. (Markets were made for and by men, not vice versa.) 7. Market-like mechanisms, as a class, have no inherent or a priori claim to superiority as mechanisms for achieving these public objectives. Nor is there, to date, any overwhelming empirical support for their widespread use. There are a number of interesting examples, in different countries, of the use of economic incentives to motivate desired changes, and these bear close watching. But this is still very much an experimental technology for system management. Moreover, there are grounds for serious concern about negative side effects from transforming the structure of motivations and rewards in health care. 8. The central role of governments remains that of exercising, directly or more traditionally by delegation, general oversight of and political responsibility for each country’s health care system. Governments are increasingly acting as “consumers’ cooperatives”, or prudent purchasers on behalf of their populations. They should choose whatever managerial tools seem to work best for this purpose, subject to the political constraints created by the fundamental conflicts of the distributive interests detailed previously. In particular, they may delegate some parts of this role, but they should not be permitted to divest themselves of it. In the one country where a coalition of private interests has prevented government from taking up this responsibility, the results have been spectacularly unsatisfactory. Annex 2. Use of the expenditure ≡ income ≡ revenue framework Health care systems have an inherent tendency toward expansion (see Module 2.3.1). When faced with the fiscal tension this creates, governments frequently turn toward strategies which increase Learning to live with Health Economics III- 93 reliance on private financing. Two of the most common strategies are to rely more heavily on user charges of various forms and/or to allow an increased role for private insurance. Both have significant

redistributive effects which the expenditure ≡ income ≡ revenue framework introduced in Module 3.3.1 can help to illustrate. In both cases, the objective is to increase the ratio of (user charges – UC, or private insurance – PI) to (taxation – TF plus social insurance – SI) in the revenues item of the framework. Typically, the objective is actually to decrease TF + SI while shifting the fiscal burden to UC and/or PI. Professor Evans notes in his article that although there is often much rhetoric about the intention of using private financing to lower the level of utilization (Q), this seldom occurs in practice. Indeed, international evidence strongly suggests that increased reliance on private financing leads to higher instead of lower levels of total health care expenditure (P x Q), accompanied by higher levels of total revenues (TF + SI + UC + PI), even though the public component of revenues (TF + SI) may be lower. (On this and other issues related to this module, participants may wish to read the detailed analysis in the Evans article (4), and also the WHO Report on the Ljubljana Conference on Health Care Reforms (5) and the Ljubljana Charter (6), which questioned the use of market-based strategies for cost-containment.) Higher total expenditure and higher total revenues must also imply higher total incomes (W x Z) which helps to explain why health care providers are often prominent among the advocates of increased private financing. They correctly perceive that this strategy will increase the resources devoted to, and therefore the incomes to be derived from, the health care system. Health care professionals such as physicians will not be the only ones to benefit from the increased incomes associated with private insurance in particular; the employees and shareholders of the insurance firms themselves constitute another important group of beneficiaries. Omitted from this analysis, it seems, are the recipients and potential recipients of the health care services, who are also the individual patients and citizens from whom the revenues must be collected, either publicly or privately. It is for this group that the redistributive consequences are potentially the most significant. Consider first the case of increased reliance on direct charges to users of services in a health care system financed primarily through progressive taxation (such as personal income taxes), which is perhaps one of the most common reform scenarios. Direct charges distribute the financial burden for care away from taxation and onto those who utilize services, for this is their purpose. Assuming that those who utilize services are the less healthy individuals in a society, the financing burden is thereby shifted away from the healthy and towards the sick. (A separate but important issue is that to the extent that direct charges do reduce utilization (Q), the reductions are often concentrated among the poor who are least able to pay the charges and who often most need the services.) If the system is otherwise financed through progressive taxation, then there is an additional redistributive effect; the wealthier individuals in the society gain more from the tax relief 5 provided by the substitution of direct charges for taxation in the revenues item of the framework. The two effects combined mean that the financial burden of paying for health care is shifted away from the healthy and wealthy and towards the sick and poor. For any one individual, whether or not he or she is better off financially with increased reliance on direct charges depends on his or her level of health care utilization and level of income, but the extremes are clear. The relatively wealthy, who are on average also relatively healthy, gain; the relatively poor, who are also on average the relatively sick, lose. This may help to explain the frequent political alliance between health care providers and upper-income individuals in support of an increased reliance on private financing. Reliance on private insurance (PI) instead of direct charges (UC) is a somewhat more complex analysis (again, participants may wish to refer to the Evans article (4)), but results in a similar picture of redistribution. Furthermore, in practice, much private insurance makes use of direct charges in combination with insurance premiums, and individual risk-rating in private insurance may price coverage beyond the reach of many lower-income

individuals and/or deny coverage altogether to very sick individuals.

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3.4.3 Privatization – assessing strategies in a central Asian republic Anthony J. Culyer & Richard B. Saltman15 Key messages • Countries in transition, especially the newly independent states (NIS), have to consider very carefully the options, prerequisites and likely outcomes of privatization. • Policy choices do not lie between a bureaucratic monolithic command-and-control state-run system on the one hand, and a fully privatized, for-profit, private system on the other. There are many gradations in between, involving different types of market. • There are numerous up and running models for central Asian republics and other newly independent states to examine and consider, change and adapt. Tutors' notes • This module builds on the understanding gained in Module 3.4.2: Privatization – overview of issues. It takes up the issues that are likely to be important in the particular context in NIS and countries at similar levels of development. Indeed, it is based on a consultancy service. • The module can help policy-makers and advisers to ask for relevant information and studies and to help others to understand some of the issues in practice. Introduction This module is divided into two parts. The first develops a set of general principles that is broadly applicable to the countries of central and eastern Europe and the newly independent states (NIS). These principles are not

value-free, however, in that they inevitably embody political and social judgements. Each country should, therefore, assess the suitability of these principles in terms of their national history, culture and long-term aspirations. The second part of the module addresses key issues specifically for the NIS and attempts to apply the principles put forward in the first part. Principles in privatization This section outlines several general principles, which can be adapted and applied within the context of each country. There is no particular virtue in uniformity of health sector arrangements, whether for 15 This module was prepared by Professor Anthony J. Culyer, Director of Health Department, Department of Economics and Related Studies, University of York, United Kingdom (e-mail: ajc17@york.ac.uk), and Professor Richard B. Saltman, Department of Health Policy and Management, Rollins School of Public Health, Emory University, USA (e-mail: rsaltma@sph.emory.edu). III - 96 Learning to live with Health Economics privatization or anything else, and each country will pursue its own individual path towards whatever goals it sets for itself. There are occasions where the international implications of internal arrangements become potentially important as, for example, when internal arrangements become conditions for securing external grants or loans (in which case, there will be trade-offs to be made and negotiations required to achieve mutually satisfactory agreements), or when financing arrangements are held to bestow unfair advantages in international trade (when the major empirical issue will usually be the distribution of health care costs paid for by owners, employers and employees in exporting industries). The principal objective for the health care sector ought, nonetheless, to be to arrange its affairs so that those public policy objectives which the elected government selects are served by the most costeffective means compatible with those objectives. Principle 1 The type, scope and degree of privatization in health care in a country ought to be evaluated in terms of that country's objectives for the health care sector, its history of provision and finance, the local culture and local resources (including managerial capacity). The structure, organization and finance of health care systems vary across countries. Although many countries have similar dilemmas, not all choose to adopt similar solutions. Solutions which may be appropriate in one context may be highly inappropriate in another. They may reflect different priorities placed on equity, or the powerful influence of one or another group of actors in the health system. They may be constrained by the availability of resources, the quality of information systems, or the level of managerial capacity within the health sector. All these factors need to be balanced in determining the scale and scope of privatization. Principle 2 Privatization is not an end in itself, but a means to achieve desired ends. When suitably designed for local circumstances, privatization may enhance the efficiency with which social objectives are achieved
5 by encouraging creative initiatives within the health care sector. The important element relates to clarity about the policy objectives sought. With an objective established, the test of the appropriateness of privatization will depend upon the extent to which it can assist effectively in achieving the desired objective over time, and the relative effectiveness of alternatives to privatization. In judging the cost–effectiveness of privatization, the analytical framework advocated here (identification of objectives followed by assessment of the effectiveness of privatisation, among other possible options) is an appropriate framework for thinking about the issues but does not remove the scope for policy judgement. On the contrary, this framework serves as an aid to judgement rather than a substitute for such judgement. There is no "scientific" solution to most major policy choices. Decision-makers confront a set of policy trade-offs, each of which has both advantages and disadvantages. The method proposed here has the advantage of making objectives explicit and encouraging systematic thought about the options for achieving them, drawing on available evidence both internationally and internally. This is preferable to "muddling through", especially

at a time when substantial change is needed. Learning to live with Health Economics III- 97 Principle 3 Privatization is a question of determining property rights and should be directly recognized as such. Property rights define the uses to which resources may and may not be used, including the terms on which they may be exchanged. Property is not inherent in the physical characteristics of any asset, but the socially determined uses to which it may or may not be put. For example, a private individual may “own” a piece of land and regard him- or herself as having private property rights in it. However, such ownership will often not include the rights to own and mine minerals beneath the land, or to use the water that flows across it, or to fly aeroplanes through the space above it, or to burn noxious substances upon it, or to hunt over it, or to build tall buildings on it that obscure neighbours’ views and access to light. In addition, others may have the right to walk or drive across the land in question, and there may be public regulations that require only certain types of building or alterations to buildings on the land (as when, for example, these buildings are of historical or cultural importance). Moreover, the enjoyment of such private rights as exist may be subject to a fixed time period (as when the land is leased) and landlords may also set other conditions to which the tenant is obliged in law to adhere. This example makes clear that it may be quite common for an asset to have a number of “owners”, each with defined rights and protected by the law. The scale and scope of the rights attached to the use of an asset have a major impact on its value, both in the commercial sense of value and in a wider social sense. For example, certain estates might not be alienable from their “owners” and therefore may not be marketed, or a publicly-”owned” asset might not be commercially exploitable, or a health care institution might be privatized on terms requiring that it be a non-profit organization. It follows that there will normally be a number of options that can be selected within the general range of privatization. The uses to which a building, such as a hospital or clinic, might legally be put are not determined by the intent to privatize per se but by the nature of the objective being sought, the range of uses to which it may and may not be put, the time period for which the private rights may be exercised, the question of whether the bundle of privatized rights includes the right to sell the rights of use in the asset, the likely wealth to be created through privatization, and the sale value of the asset to the public sector when it is privatized. There is thus considerable scope within any privatization programme for a variety of types of transfer from the public to the private sector, which are best considered in terms of their likely consequences for public policy objectives. Therefore, even within a privatization programme there is a range of choices, and decisions concerning them should be selected according to which bundle of rights is most likely to deliver the desired objectives at least social cost. It should also be noted that even if state assets are transferred to the private sector at a zero or near zero price, the contractual terms of the transfer can include consideration of who would share in any net revenue stream should the privatization achieve its objectives. The contract can further make clear the nature of the activity expected of the privatized organization, how this is related to social goals, and how the organization will be made accountable for its activities. Principle 4 Selective privatization is more likely to work effectively in service provision than in funding. This principle derives from a combination of practical experience as well as more subjective and more culturally dependent value judgements. Private health care insurance can be defined as providing insurance against the cost of medical expenses rather than insurance against the cost of ill III - 98 Learning to live with Health Economics health per se. It may be either monopolistic or competitive. If it is monopolistic, a strong system of state regulation will be essential to control common abuses of monopoly power in the form of unnecessarily high premium prices. One way to exert control in the monopoly case might be to contract out the (public) insurance function for a

specific period of time to the most cost-effective private bidder who is also willing to be committed to meet the overall social objectives set by the government. Such a contract is difficult to monitor and enforce. However, weaker forms of regulation may be even less capable of delivering these objectives and will inevitably involve even higher monitoring and enforcement costs. They also require a degree of sophistication on the part of regulators that most countries do not possess. Competitive private health care insurance often leads to risk discrimination in premiums and, in the case of the very elderly or the chronic sick, typically produces prohibitively high premiums that drive them out of the market altogether. This then requires explicit public insurance programmes (such as Medicare and Medicaid in the United States). In addition, competition among private for-profit insurers engenders risk discrimination within those groups which private companies will insure. Since in all societies, the incidence of sickness and social status (or income) are inversely related, competition among insurers typically violates the equity objectives set for the health care system. It sometimes also violates efficiency objectives as, for example, when these are set in terms of maximizing the contribution of health care services to health gain in the community. Principle 5 Consult as widely as possible in setting policy objectives. Medical care systems require complicated choices and trade-offs, both at the system level (such as setting a limit to public expenditure on health care) and at the more detailed level (such as denying forms of care to some but not to others). In general, it is better for these decisions to reflect a broad process of consultation and, where appropriate, involve a wider public in their discussion. In this way, the values embodied in the health system will better reflect those of society. Principle 6 Never let the perfect become the enemy of the merely good. The above principles involve values and judgement. The importance of setting clear objectives for the design of health care systems and their supporting systems plays much the same role as setting moral principles for the conduct of one’s own professional and personal life. One may not always live up to them, but it is rather important to know where one is failing, so that steps may be taken to remedy the worst departures from the ideal. For example, although it may be intended that a health system should treat all citizens equally in their access to health care, it might be more realistic to compromise by allowing a small private sector both for insurance and for health care to cater for certain needs (such as foreign visitors and the wealthiest citizens), or to compromise on the availability of expensive medical treatments by defining limits to entitlement.

 Principle 7 Limited small-scale experiments, trials or pilots schemes are often better than trying to implement new policy ideas across the entire health system. The case for policy experiments (for example, in one region or oblast) is that they enable a ministry to test the feasibility of an idea in the light of the experience gained. Such experiments make it possible to identify best practice and to share it more widely. This does not negate the value of local experimentation for local purposes. Moreover, experiments can and ought to have a bottom-up as well as a top-down motivating force. The ministry should, never the less, be informed about experiments so as to disseminate good practice and discourage bad practice as it is revealed. It may also offer advice on the design and implementation of experiments. Policy experiments should be designed so as to enable an informed judgment to be reached as to whether the changes observed in the experimental group may, through comparison with the controls, be reliably attributed to the policy changes in question as distinct from other changes going on at the same time. More generally, pilot projects avoid having to put all one’s “policy eggs” into a single basket in a situation where there is doubt as to whether a proposed policy will achieve the objectives sought at a reasonable cost compared to either the status quo or some other alternative. Pursuing privatization in a central Asian republic Privatization ought to be part of a broader strategy for overall health

care reform The health care systems that most NIS inherited at independence had substantial advantages but no less substantial disadvantages. The challenge to the central health sector has been to develop and implement policies that can address the disadvantages while not undermining the inherited advantages. Proposed health policy changes need to be evaluated in terms of their probable outcomes, so that policy-makers can be reasonably confident that the changes will indeed reduce inherited disadvantages (e.g. inefficient management of existing institutions, the frequent poor quality of services, and the counter-intuitive combination of under-resourcing health services in general while simultaneously over-investing in institutionally-based care) while not harming the inherited advantages (in particular, the access of all citizens to a fairly full range of health care services). This balancing or trading-off of two different, conflicting, needs requires a fully thought out and comprehensive approach to health sector reform. An effective reform strategy could include the privatization of ownership of certain health care institutions as a part of a more comprehensive approach towards the whole sector, consistent with movement towards more widespread private ownership in society in general. If introduced through a period of experiment or a pilot project, such a strategy could provide plausible answers to such crucial questions as which institutions to privatize (and why), to whom they would be transferred (and why), the nature and scope of the property rights thus transferred (and why), the price at which they were transferred (and why), the regulatory environment in which the privatized institutions would operate (and why), whether the objective sought was likely to be met, the speed at which the process should go ahead, and how the process should be best managed. All these issues require careful consideration about the balance of advantage and disadvantage in the inherited system and of the overall goals of the health care sector. Sharp, rapid and ill thought III - 100 Learning to live with Health Economics through privatization is extremely unlikely to satisfy these policy requirements. Indeed, such a process is likely to create as many problems as it resolves. Moreover, ill-planned privatization may not shift the responsibility for solving problems from government, and yet make it more difficult for policymakers to solve them. Inadequately conceptualized and planned privatization schemes will inevitably damage the current and prospective health of the weakest and most vulnerable members of society: children, the elderly and the chronically ill, particularly among the poorest members of society. In short, if privatization is not to undermine the overall objectives of the health care system, it must be part of a clearly defined, broad and comprehensive strategy of health sector reform covering finance, structure, ownership and organization, and long-term objectives. When privatization was proposed in several NIS in the mid- to late 1990s, such a broad comprehensive strategy did not exist. The impression was one of “privatization for privatization’s sake”, as a universal panacea for the inherited problems of the countries’ health sectors. Indeed, the major objective in some countries seemed to be driven by fiscal rather than health policy considerations, that is, to reduce the ministry of the economy’s budget allocation for health care. This appeared to represent a confusion between means and ends which is particularly dangerous for countries going through massive economic transition, with all the negative health consequences that accompany such transitions. These privatization proposals appeared to reflect the lack of effective change up to that point within the health care sector, presumably in the belief that shock tactics were necessary to address the system’s problems. However, inappropriate privatization, or privatization on an inappropriate scale and at an inappropriate pace, would generate consequences that run wholly counter to aspirations for what the sector ought to be achieving. Yet the reasons for lack of responsiveness in the sector may have more to do with the absence of a clearly signalled future direction. This leads again to the centrality of a sector-specific

strategic vision and the practical plans which flow from it. One particular structural dilemma in several NIS is the dispersion of health-related responsibilities across several ministries. The development of a coherent health care policy is thus even more difficult to achieve. While several ministries have legitimate interests, there is an urgent need for them to be coordinated and for clearly defined responsibilities to be identified both for a broader health care strategy and for the specific privatization programme. The need for complementary policies Privatization is a means to an end, not an end in itself. The objectives of the process of privatization (which should include minimal destabilization and disturbance) are not the same as the objectives of having a sector that is in varying degree privatized. The objective of having a (partially) privatized health sector would be to increase economic efficiency by reducing the cost per unit of output and improving the quality of output. Privatization is a potential, though not inevitable, threat to equity. Equity objectives are a constitutional matter in all NIS. If threats to equity are not to materialize, privatization needs to be accompanied by a set of complementary policies. Indeed, the greater the extent of privatization, the more important it is that effective complementary policies are put in place. These complementary policies are, in effect, necessary conditions for privatization to meet efficiency goals and minimize adverse effects on equity. Their nature reflects the point made above, that privatization is a means to an end. Further, privatization ought to be seen as only one element in a broader strategic approach to the health care sector, not itself alone the sum total of that strategy. Learning to live with Health Economics III- 101 There are several essential complementary policies, all of which interact with the others. Some of the factors that might be considered to be particularly relevant in NIS include those listed below. (a) In choosing what to privatize there are essentially three interrelated factors to consider: (i) which institutions? (ii) which services? (iii) what charges ought to be applied (to which services) and who ought (and ought not) pay them? Current patterns of eligibility and the financial contributions required of patients vary considerably in NIS according to the policies of local institutions. There is much to be said for having a national policy in accordance with the equity requirements of the country's constitution. (b) One way of approaching these issues is to examine critically those services currently falling into the categories of "guaranteed" or "basic" packages, in order to consider which services might be included in a "core" group of services freely available to all citizens. Obvious candidates include primary diagnosis, emergency care, care for chronic diseases, public health, and health education. Within each category of core services, only those of demonstrable effectiveness ought to be included. (c) Publicly-insured services need not be provided only in publicly-owned institutions. (d) Certain categories of person are typically not required to
5 make co-payments (or make them at a reduced rate) for core services, including children, the elderly, the very poor, the disabled, pregnant women and veterans. There is an important distinction to be made between formally agreed copayments and the informal payments that characterize a good deal of the current systems. Formally agreed co-payments ought to reflect the objectives of policy. Informal payments reflect local decisions and are likely to be arbitrary, inequitable and inefficient. (e) Privatization does not necessarily equate to "for-profit". In many countries, hospitals and clinics operate in the private sector as charities or non-profit trusts, operated by either religious organizations or secular ones. In several NIS, the current absence of a sophisticated system to regulate independent sector institutions, and the lack of a tradition of private management, suggests that the way forward would be to maintain a strong public sector presence. This approach harnesses existing and developing national management structures to ensure that the system is as integrated as it can be in pursuing nationally decided priorities. For-profit and non-profit experiments might be conducted through carefully designed pilots and trials. Privatization may

take many forms and a simple private/public distinction bears little resemblance to the great variety of options that are actually available. Operation of the capital market To the extent that there is a limited capital market (private sources of borrowed funds such as bank loans and bonds), state assets transferred to private hands will have a lower value and contribute less to the delivery of efficient service delivery, due to the private sector's inability to borrow at competitive and relatively low real rates of interest for investment. If borrowing is excessively costly for potential purchasers of state assets, then potential buyers from within the country will be relatively few and the proportion purchased by external agencies relatively high. If borrowing for routine operational purposes (working capital, investment in the enterprise) is excessively costly, adaptation to change, investment in personnel (both hirings and professional training/development) and investment in equipment and buildings will all be sub-optimal and limit the efficiency gains hoped for. III - 102 Learning to live with Health Economics Creation of a regulatory framework A privatized portion of the health sector will require a sophisticated framework of national regulation. This includes the establishment of national standards for personnel and institutions as well as the monitoring and evaluation of both the providers' performance and the health outcomes of the system as a whole. The absence of an effective regulatory environment would make it undesirable to privatize provider institutions due to the dangers of abuse of private monopoly power. Regulation of privatized units within the health care sector is also required for other purposes, for example to control professional monopolies, and to preclude health care procedures for whose ineffectiveness or damaging effects there is an evidential basis, such as uncontrolled over-the-counter purchases of antibiotics. It is worth noting that public health care agencies also require monitoring and regulation in these matters. Training of central experts and managerial cadres Privatization places high demands on the skills of managers at all levels. Skill development is required not only to manage the process of change itself but also to manage privatized institutions in ways that are proactive rather than reactive, that are innovative and show willingness to take (sensible) risks, that show strategic vision and an understanding of the overall objectives for the sector, and that have the ability to distil practical and operational plans from a broader vision. Such skills cannot be acquired overnight but require training programmes. Contracting framework Private health care providers (whether for-profit or non-profit) are all potential contractors with state "purchasers" of services. These might be a compulsory state insurance fund, regional or oblast authorities, or other public agencies which decide to purchase services on behalf of defined population groups. An important element of meaningful competition is competition between private and public providers of care. If this is to be introduced (and it is a model much used in western Europe), a contracting environment needs to be created through which: (a) the public purchasers can specify their requirements (volume, type of service, target clients, quality, cost, terms of access for clients, etc.); (b) potential providers can bid for such contracts; (c) performance can subsequently be monitored; and (d) long-term relationships between contractors can be established. Over time, such contracts can be useful means of securing what is becoming an increasingly important element in North American and European health care systems: the provision of evidence-based medical care. The absence of such a mechanism between purchasers and providers is likely to lead to the isolation of private from public providers, the development of at least two tiers of service (with perceived quality differentials and violation yet again of equity desiderata) and missed opportunities to use the private sector as an instrument for achieving social policy objectives. The contracts do not need to be legally enforceable formal contracts, but are better seen as written expressions of the joint intentions and the chosen means of delivering them of both purchasers and

providers. Creation of purchasing power A private health care sector confronts three sets of potential purchasers: (a) public purchasers who contract on behalf of specific population groups (defined, say, by area of residence); (b) private insurance agencies which may contract for specific services on behalf of their clients; (c) private individuals who pay out-of-pocket (and preferably not under-the-counter) or via their private insurance cover. Learning to live with Health Economics III- 103 A private sector relying for its income solely on the third of these has an inherently limited market in several NIS and will consequently have a restricted scope owing to the limited purchasing power of most citizens. The present time thus presents a useful opportunity to bring about a coherence of the private and public sectors, whereby private providers have an opportunity to develop through extensive reliance on public contracts, the two parts of the sector can develop mutual understanding of what is expected of each, technology and evidence-based practice can develop evenly in each, and public policy can be directed to the monitoring and control of private health care and private health care insurance. Maximizing asset sale prices It is relatively easy to divest the public sector of assets. It is harder to do so in a way that maximizes the financial gain to the public sector and thereby generates maximum income to the state to offset budget deficits and reduce public debt. This is not merely a question of the type of bidding procedures to be adopted. It also requires attention to those factors within the economy that create a demand for such assets and that help to determine their value (essentially the current value of positive net receipts from their operation, whether as health care providers or in some other economic activity) and indeed whether they have any value at all. Factors that depress the sale value of state assets include the small number of clients for privatized services and poorly developed capital markets. It might, even when the capital market is poorly developed, make good strategic sense to privatize selected institutions whose sale would bring little cash into the state budget (other than a possible reduction in a continuing recurrent expenditure drain). The transfer of state assets at a zero or near zero price does not, however, mean that they should be transferred without clear contractual terms specifying the activity to be undertaken in the privatized institution, whether it is to be a profit-making or a non-profit organization, and the nature of its accountability to the state. Nor should it be done without recognising that, despite a current low asset value, if the privatization is successful in achieving its objectives, privatized organizations represent potential sources of considerable wealth in the future – which should accrue to the public or private sectors according to the terms of the transfer. Reconsidering ends and means – alternative policy options The interaction between and the mutual reinforcement of the components of the broader strategy outlined above are important. Two points in particular are worth highlighting: (a)

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if the overall objectives of efficiency and equity in health care policy are to be achieved, neither the process of privatization nor the subsequent operation of the private sector will be optimized by treating each as a separate issue, nor will overall objectives be realized by failing to ensure appropriate coherence of the public and private sectors once the private sector is up and running; (b) the equity objectives of the health care system are likely to be seriously compromised if low quality (public) and high quality (private) services develop – a process that would be encouraged were private health care insurance to become significant. As noted above, privatization should be viewed as simply one possible tool which can be employed to achieve a more fundamental set of policy objectives. The WHO Ljubljana Charter on Health Care Reforms (1), adopted by WHO European Member States (including the NIS) in June 1996, defines these fundamental principles as driven by values, targeted on health, centred on people, focused on quality, based on sound financing and oriented towards primary care. The general principles presented here mesh well with these. The central question for NIS governments thus becomes: what policy interventions provide the most cost-

effective means of achieving these six general health sector objectives. III - 104 Learning to live with Health Economics Privatization is often linked with a theoretical view that health care is a commodity, like most other commodities, which ought to be available for purchase and sale on the open market. This may be a tempting view for any country that has inherited a communist health care system. There is, as a matter of fact, no developed country in the world which, in practice, treats health care in so thoroughgoing a commercial manner. Even the United States, which dramatically differs from other OECD countries in dependence on private insurance and for-profit organizations on the provider side, does not apply this theory fully. Over 40% of health care funding comes from compulsory taxation (mainly to support Medicare and Medicaid) and there remains a substantial number of tax-funded hospitals providing services to the indigent poor and military veterans. The for-profit commercialism of the United States system is nonetheless substantial and it carries a high social and financial price. Total health care costs per person in the population are almost double the OECD average and more than double those in the almost wholly public systems of Sweden and the United Kingdom. Moreover, even with 15% of GDP devoted to health care in the United States, fully one third of the entire population is either completely uninsured (43 million citizens) or only partly insured (50 million). Only poor elderly citizens in the United States have the right to tax-financed home care or long-term nursing care. Put bluntly, the notion that health care ought to be treated as a commercial commodity, and the consequent high level of privatization in both finance and provision, are directly linked to the failure of the United States to provide adequate health care for its entire population and to the enormous cost of what it does provide. The NIS should look, perhaps, to other systems as models for further consideration and adaptation. In western European countries health care is viewed as a social good, one whose benefits accrue not only to those who directly receive its services but also to the public at large and whose equitable distribution is seen as lying at the core of policy objectives. In countries such as Finland, the Netherlands, Sweden and the United Kingdom, and to a lesser degree Italy and Spain, there have been serious and sustained attempts to introduce market-style incentives and more sophisticated management into what have remained publicly-owned, publicly-operated and publicly-accountable health care systems. Public hospitals have not been privatized (although public patients have on occasion been placed in private hospitals) but have instead been transformed into managerially independent public firms which are publicly accountable. They no longer receive a global budget from the state but are instead funded on the basis of contracts or agreements with funding bodies that embody performance targets. In Sweden patients can choose the hospital at which they are to receive care and the money received by the hospital follows the patient. Similar types of “public” or “internal” markets exist between primary care professionals and secondary care, and between social, home-based care and nursing home providers and hospitals. All these arrangements can be characterized as planned markets which are designed to deliver specific public policy objectives and to ensure that the relationship between purchasers (or commissioners) and providers is one that brings stability and mutual understanding and agreement about objectives, thus enabling well targeted long-term investment in staff and other resources over time. Not all these arrangements demand highly sophisticated management and many could be introduced with relatively modest investments in the relevant skills. A similar set of options exists with regard to the public body or bodies which do the commissioning or which oversee the providers. This need not be the state directly but could be elected regional bodies (Sweden), municipalities (Finland) or specially appointed authorities (the United Kingdom). With these kinds of decentralization, some general framework is required, for example to specify

national Learning to live with Health Economics III- 105 objectives for the reduction of mortality from specific causes and for maximum waiting times. Ultimately these bodies are accountable not only locally but also to central government and to national regulatory (sometimes professional self-regulatory) bodies which monitor and control standards. Thus, the key policy choices at the broadest level do not lie between a bureaucratic monolithic command-and-control state-run system on the one hand, and a fully privatized, for-profit, private system on the other. There are many gradations in between, involving different types of market, and there are numerous models in existence for the NIS to examine and consider, change and adapt. Exercise 1. Advice on privatization in a newly independent state The government in a newly independent state (or a country of similar level of economic development) has decided to push for privatization throughout the economy. You are asked to advise on greater privatization of particular aspects of health care or the wider health systems. • What are the objectives which greater privatization in health might enable to be more efficiently or more equitably achieved? • If there would be any major disadvantages, are there ways in which they could be countered or minimized? • What are the likely costs and benefits of greater privatization in the country, and who might gain or lose? • Would your judgment and advice also hold for another country with a different level of economic development? References 1. The Ljubljana Charter on Reforming Health Care. Copenhagen, WHO Regional Office for Europe, 1996 (document EUR/ICP/CARE 9401/CN01). Further reading See the lists of references and further reading at the end of Module 3.4.2: Privatization – overview of issues. Chapter IV Economics of management and the change process Learning to live with Health Economics Edited by H. Zöllner, G. Stoddart and C. Selby Smith WHO Regional Office for Europe Copenhagen, 2003 Key Words HEALTH ECONOMICS DELIVERY OF HEALTH CARE – economics HEALTH POLICY – economics SOCIOECONOMIC FACTORS HEALTH SERVICES ACCESSIBILITY HEALTH CARE REFORM COST–BENEFIT ANALYSIS – methods OUTCOME ASSESSMENT (HEALTH CARE) PROGRAM EVALUATION – methods FORECASTING TEACHING MATERIALS

 EUR/03/5042783 Contents

health care 57 4.4.2 Citizens' participation, patients' rights and ethical frameworks.. 71 Chapter V. Useful economic tools . Learning to live with Health Economics IV- 1 4.1 Introduction Chapter 4 of the learning materials is concerned with change, a pervasive feature of health systems in Europe and the societies in which they are embedded, and how the change process can be managed. Change is endemic at all levels of European health systems, and some commentators argue that the rate of change is accelerating. Change and how to manage it is relevant to all stakeholders in the health and health care systems. It also affects their relationships with other sectors, disciplines and stakeholders. The discussion of the change process and its management is organized in three sections, which include a total of six modules. Section 4.2 includes a module by Professor John Lavis of McMaster University in Canada providing an introduction to concepts for health policy analysis, and two further modules on health management and administration. Health policy analysis is the study of why groups respond to some health problems or issues and not others, why they develop some health policies and not others, and why they implement some health policies and not others. Identifying patterns in agenda-setting and the development and implementation of health policy, as well as understanding the reasons for those patterns, are important skills for those in the health field. Module 4.2.1 supports the development of these skills, which are important for all the potential users of the learning materials, particularly those in senior policymaking or policy-influencing positions (in health and related areas). It also emphasizes that, while analytical constructs can be a valuable aid for understanding and empowerment, the world is a messy place where the implementation of change generally involves bargaining, negotiation and compromise. Module 4.2.1 considers health policy at three levels: legislative, administrative and clinical (where a practice guideline can be thought of as a health policy for clinicians). For example, at the legislative level three factors are cited to help explain action or inaction in policy development: interests (who wins and who loses), institutions (the rules for decision-making), and ideas (both values and research). The module concludes that policies are more likely to be developed when the benefits are concentrated among more influential groups and when the costs are diffused across less influential groups; when decision-making structures concentrate influence in a small number of individuals at the same level of policy-making; when policies are less visible (especially to those who will have costs imposed on them); and when both values and empirically tested "facts" support the policy. 4. Economics of management and the change process IV - 2 Learning to live with Health Economics The two further modules in Section 4.2 are concerned with the administration and management of change. Module 4.2.2, by Keith Barnard and Professor Chris Selby Smith looks at how public health is managed politically (by government or organized society rather than in the narrower party political sense), noting that the ultimate responsibility for the overall performance of a country's health system must always lie with government. The module emphasizes that HEALTH21, the health for all policy framework approved by the WHO Regional Committee for Europe in 1998, is intended to stimulate and guide countries and communities, enabling them to develop strategies that address the determinants of health and result in: socially responsible and sustainable health development; greater equity in health; higher levels of health throughout the individual's life; a reduced burden of sickness and injury through the unlocking of new resources for multisectoral action; and high quality cost– effective health care. The underlying ethic is that of equity. The module also discusses the valuable contribution which can be made by economics and economists to the achievement of the objectives of HEALTH21, and key success factors for an effective approach to the political management of health policy and changes in health practice. The essentials are articulated clearly: the shared view; the

political will to cooperate; the support of participating interests; appropriate mechanisms and structures for identifying and implementing options; and a climate of creativity. The module concludes that: “While it may not be easy, while it may take time, it can be done. However, it often is not done; and the task tends to be more difficult in a declining economy than in an expanding one.” Module 4.2.3, by Professor Chris Selby Smith and John Wyn Owen, is concerned with health administration and management at a more devolved but no less important level. The module notes that all managers are affected by the environment in which they work, that the environments in which health care managers operate have some special features, and that, in many European countries, significant changes are taking place in that environment. The authors argue that managers contribute to the provision of health care and the achievement of health gain i.e. adding years to life and quality life to years. Managing for health involves deciding what needs to be done and ensuring that it gets done, through people. Managers are concerned with both processes and outcomes, where outcomes include quantity and quality. Since managers take decisions in order to achieve results, it is crucial that the objectives to be achieved are clearly defined, however difficult it may be to achieve them completely and irrespective of whether tactical adjustments are required from time to time (they will be). Good managers provide a support service, which enables a wide range of resources (wider than in many other industries) to be brought together in an efficient, effective, economic and equitable manner. The result is enhanced achievement of the health objectives of their organizations. People are a particularly important resource in health care; over time, good management expands the capacity of people, whether providers or users, to achieve outcomes and make informed choices. Outstanding managers, the authors argue, are characterized by their ways of thinking, presenting and behaving. While they are aware of the complexities of the managerial environment they are not paralysed by analysis. They are oriented to action and to taking the best decisions which are possible in the prevailing circumstances. The manager’s role necessarily involves balancing a range of risks, deciding on the course of action which appears to be most appropriate in the light of the available information, and ensuring that it is pursued in a business-like fashion. “The only manager who never makes a mistake is the one who never takes a decision, so that risk management is inherent in the role.” The managerial role is demonstrated in practice. How the manager acts tends to be more powerful than what he or she says. Much of the manager’s influence occurs through setting the climate, in Learning to live with Health Economics IV- 3 leadership rather than mere administration. Managers also need to be aware of the dynamic elements of the managerial task and of the intersectoral contributions to health outcomes, and that he or she has responsibilities to the wider health care system and society as 5 well as to the particular institution. Section 4.3 contains one module written by Professor Björn Lindgren from the University of Lund, Sweden and Professor Michael Drummond from the University of York, United Kingdom, with contributions from Eva Bondar in Hungary. Module 4.3.1 is concerned with the development and diffusion of health technology where costs (capital and recurrent) and benefits can be substantial. It emphasizes that technologies for health, which are the mechanisms through which resources are combined to produce health improvements for the individual and for the overall population, are not confined to the clinical care sector but comprise all health promotion, disease prevention, diagnosis, treatment, rehabilitation and care activities. New health technologies are developed by publicly or privately funded research and development, but they are not developed haphazardly. They are induced by the incentives which are provided for developing specific kinds of technology. The incentives may be created by government regulations or by the financial incentives of the market. The authors stress that considerable inefficiencies can occur in how health technologies are produced and how they are used. The

payment mechanisms for health professionals and institutions are among the factors which can either inhibit or encourage the development and diffusion of health technologies, while both regulation and financial incentives can be used to encourage a more rational process of diffusion and use. Economic thinking, economic models and economic evaluation can help decision-makers decide whether to use various health technologies, when and to what extent, and subject to what indications or other conditions. In general, new health technologies are diffused gradually, technologies which have entered the health care system are not easily removed, and many older health technologies have never been subject to careful economic evaluation of their costs and benefits. Section 4.4 includes two modules. Module 4.4.1, prepared by Chris Buttanshaw (United Kingdom), is concerned with primary health care. He emphasizes that primary health care, the broad concept underpinning HEALTH21, covers both a way of organizing health care and a set of beliefs about the best way of improving health. It includes care directed at both individuals and communities; its interventions are often diffuse and difficult to evaluate with the empirical quantitative methods which are frequently used in health economics; and its resources are often provided through informal care, by individuals, families or communities. Primary health care has much to offer in terms of costeffective interventions, but there are many factors that can prevent these services having an appropriate priority. There can also be differences between the viewpoints of professionals, individual patients and society in general. The module reiterates the message that, in many countries of the WHO European Region, changing demography and social patterns pose special challenges to primary care, especially in terms of longterm care and care for older people. The module also stresses that lack of evidence is not necessarily evidence of lack of effectiveness. The difficulties in obtaining hard evidence, such as that from randomized controlled trials, are greater in some parts of the health system than in others. The author points to a danger that, with developing evidence-based initiatives, resources may be allocated to areas where harder evidence is available, which may not necessarily be the areas where the health needs are greatest. Module 4.4.2, by Dr Manfred Wildner and the late Dr Oliver Sangha (Munich, Germany), is concerned with citizen participation, patients' rights and ethical frameworks. It makes a valuable contribution to the learning materials, since these topics are often inadequately considered in many health economics textbooks and traditional economic theories based on individual preferences do not IV - 4 Learning to live with Health Economics adequately describe the full set of conditions influencing demand in health care markets. In fact, knowledge of theoretical frameworks of ethics and rights, as well as the possible strategies for their implementation, is of great importance for health economists as they can regulate or otherwise influence the market and the behaviour of participants on both the supply side and the demand side. Furthermore, public participation, patients' rights and consumers' rights are widely expected to play an increasingly important role in medical practice as well as in other health care markets in the future. The module is highly relevant for all four of the groups of potential users of the learning materials, with the understanding that ethical choices can be painful. A health service which seeks to retain the confidence of its patients, its political constituency among the general public, and its funders (whether public or private) cannot afford to ignore the important issues which are raised in this module. Learning to live with Health Economics IV- 5 4.2.1 Policy analysis, bargaining and negotiation John N. Lavis1 Key messages • Why are some health problems or issues on the agenda to be deliberated (and not others)? Why are some health policies developed to achieve particular objectives using particular policy tools (and not others)? Why are some health policies acted upon by people in the field (and not others)? Identifying patterns in agenda-setting and the development and implementation of health

policy, as well as understanding the reasons for these patterns, are important skills. • Health policy can be considered at three levels: clinical, administrative and legislative. Health policy analysis is the study of why groups respond to some health problems or issues and not others, why groups develop some health policies and not others, and why groups implement some health policies and not others. Each of these topics can be explored at each level of the audience. • Health care providers work at the intersection of educational, economic, administrative, community and personal environments, and the concordance of a practice guideline (which can be thought of as a health policy for clinicians) with these environmental influences will determine whether it is implemented. Practice guidelines are more likely to be implemented when large amounts of high-quality information from a range of sources support the action or inaction suggested by the practice guideline, when financial incentives reward it, when regulations make such action or inaction possible, when public pressure is either non-existent or supports the action or inaction suggested by the guideline, and when personal experience makes the health care provider comfortable with the action or inaction suggested by the practice guideline. • Three factors are typically cited to explain action or inaction in policy development at the legislative level: interests (who wins and who loses), institutions (the rules for decision-making), and ideas (both values and research). Policies are more likely to be developed when the benefits are concentrated among more influential groups (and the costs across less influential groups), when decision-making structures concentrate influence at the same level of policy-making and when policies are less visible (especially to those who will have costs imposed on them), and when both values and empirically tested "facts" support the policy. 4.2 The process, administration and management of change 1 This module was prepared by Professor John Lavis (e-mail: lavisj@mcmaster.ca), Centre for Health Economics and Policy Analysis, McMaster University, Canada. IV - 6 Learning to live with Health Economics • These insights can be used to assess the feasibility of change and to establish a strategy for bringing about change if it appears feasible. For example, certain people may have a particular policy that they would like to see developed. The first step involves a stakeholder analysis to determine who wins and loses, and what this means for the proposal's political feasibility. The second step is to determine the rules for decision-making and whether values and empirically tested "facts" support the policy. The final step uses the knowledge from the first and second steps to establish political strategies for improving the chances that the policy will be adopted. These strategies can include bargaining, strengthening the position of supporters and weakening the position of opponents, and mobilizing disorganized supporters and deterring organized opponents. Tutors' notes This module introduces a very different set of skills from
5 the modules that precede it. **As outlined in Module 3.2.1 on the relationship between the health for all (HFA) strategy and health economics**, the frameworks and tools from health economics can help in understanding the HFA targets and how to implement them. The frameworks and tools from health policy analysis expand the discussion even further and provide an understanding of the context in which these targets may be discussed, converted into policy and acted upon. While it is not an exercise for this module, participants could be challenged to answer the following questions. 1. What conditions would make it more likely for the idea of "health for all" to be put on the agenda of legislators in participants' countries? 2. What conditions would make it more likely that HFA policies (with targets and indicators) are developed by their countries? 3. What conditions would make it more likely that HFA policies (with targets and indicators) are implemented by their countries? One important condition is met by encouraging policy-makers, civil servants and other government technical staff, health care managers and health care professionals to learn about health economics' frameworks and tools. This module seeks to stimulate thinking about

the other conditions. The first exercise is aimed at the level of appreciation. The first half of the exercise would provide the most opportunities for learning if at least some members of the group were either health care managers or health care professionals (e.g. doctors and nurses). The second half of the exercise would provide the most opportunities for learning if at least some members of the group were either policy-makers (e.g. elected officials) or civil servants and other government technical staff. These subgroups would have valuable experiences on which the tutor could draw to illustrate points for participants who are unfamiliar with practice guidelines or legislative policy. The second exercise is aimed at the level of (critical) appraisal. It can be used with the following groups: • policy-makers (e.g. elected officials) • civil servants and other government technical staff • health care managers • health care professionals (e.g. doctors and nurses). The first two subgroups would be a helpful resource to the tutor in working through the exercise because this is a type of analysis with which they are very familiar. Learning to live with Health Economics IV- 7 Introduction For those working in the health field, there can often appear to be no particular reason as to why some health problems or issues are on the agenda for discussion and not others, why some health policies (and not others) are developed to achieve particular objectives using particular policy tools or why some health policies are acted upon (and not others). Identifying patterns in agenda-setting and the development and implementation of health policy, as well as understanding the reasons for these patterns, are important skills for those in the health field. This module supports the development of these skills by encouraging participants to explore these patterns in the context of their own countries. The objective is to provide participants with several analytical tools for health policy analysis, rather than to discuss the advantages and disadvantages of particular health policies. The module begins with a framework for understanding the range of topics that health policy analysis can address. Two examples of health policy analysis are provided, one at the level of a health care service (caesarean sections) and one at the level of the health care system (user fees for health care services), followed by an exercise for participants which builds on these examples. The module then introduces tools for understanding patterns in two of the topic areas: the implementation of clinical policy and the development of legislative policy. The enumeration of factors is not meant to be exhaustive; participants are expected to add to and modify them. The module concludes with a second exercise in which participants are asked to select two cases of policy development and, in view of their awareness of possible explanatory factors, to offer explanations for why these policies rather than others were introduced. Health policy analysis Health policy analysis is the study of why groups respond to some health problems or issues and not others, why groups develop some health policies and not others, and why groups implement some health policies and not others. In other words, health policy analysis is the study of agenda-setting, health policy development and health policy implementation. What health policy is not also warrants attention. Health policy analysis does not include the study of how best to advance particular interests (i.e. political strategy) or what interests to advance (i.e. political advocacy). Health policy can be considered at three levels: clinical, administrative and legislative. The clinical level includes health care providers who deliver services to patients. These providers often play a role in deciding which health problems or issues warrant the development of clinical practice guidelines (e.g. treatment of dyspepsia, treatment of HIV disease, or use of caesarean sections) and how these guidelines will be developed (e.g. by using clinical evidence regarding effectiveness, analytical evidence about decisions regarding the cost–effectiveness of alternative courses of action, or econometric evidence of budgetary impact). Moreover, these providers are the people called upon to implement clinical practice guidelines. The administrative level includes

the range of administrators working in health-related facilities or programmes. These administrators often play a role in deciding which health problems or issues warrant the development of administrative policy and which administrative policies will be developed. They may be called upon to implement their policies or may work with health care providers or other administrators to implement their policies. The administrative level also includes private firms whose managers can make decisions about how the employees should be treated or what products and services should be produced, in part on the basis of the health consequences of their decisions. The legislative level includes the politicians and senior IV - 8 Learning to live with Health Economics bureaucrats charged with the authority to develop legislative acts or regulations that can affect health. These politicians and bureaucrats ultimately decide which health problems or issues warrant the development of public policy, which legislative policies will be developed, and under which legislative policies resources will be allocated to facilitate or monitor implementation. It is recognized that there are a number of issues, especially in safety and risk management, where the population manifests political will and influences agendas directly. Note that this categorization differs slightly from the categorization of decision-makers introduced by Professor Stoddart in Module 2.3.2. His categories can be collapsed into individual service providers (corresponding to the clinical group), programme managers and regional or community authorities (which, with the addition of the administrators in hospitals and other health facilities, corresponds to the administrative group), and elected politicians and senior officials of government ministries (corresponding to the legislative group). Table 1 provides a conceptual framework for this discussion. It outlines three distinct topics that health policy analysis might be used to explore – agenda-setting, policy development and policy implementation – and the three levels (clinical, administrative and legislative) at which these topics can be considered. These examples and those in the text below provide brief illustrations of the two most frequently studied topics from Table 1: the implementation of clinical practice guidelines and the development of legislative policy. While agenda-setting is not further discussed in this module, interested participants can obtain a rigorous introduction to this field by consulting Kingdon (1). Table 1. Examples of topics addressed by health policy analysis Steps in the policy-making process Levels of policy-making Clinical Administrative Legislative Agenda-setting Development Implementation Why are particular practice guidelines developed? Why do needs of a particular group become an issue? Why does privatization of health care become an issue? Why do practice guidelines for the same condition differ? Why do some managers of primary care centres focus on young children and others on the elderly? Why do some governments privatize health care and others not? Why are some practice guidelines implemented? Why do some
5 programmes targeted at particular groups succeed? Why do privatization initiatives sometimes succeed? Learning to live with Health Economics IV- 9 Health policy is not just health care policy. As foreshadowed by Professor Stoddart in Module 2.2.1 and addressed by him explicitly in Module 2.2.2, health policy may have health as an objective or as a consequence. As examples of the former, consider policies related to the remuneration of health care providers or policies related to income support for low-income pregnant women to allow them to afford better nutrition and make eating choices that are healthier for their babies. As examples of the latter, consider tax or transfer policies to reduce the financial burden on low-income parents with small children or more generally public policies on taxes and income security. As Professor Stoddart points out in Module 2.3.1, while “the health care system is a critical component of health policy, and in most countries receives the largest share of resources directed to health as well as the largest share of media coverage about health issues”, it is not the only component of health policy. Some examples of health policy As a first example of a health policy, consider a practice guideline. Such a guideline can be

considered a case of explicit clinical policy. In Module 3.4.2, Professor Stoddart introduced the idea of practice guidelines in the narrow context of the requirements for clinical employees set out by some international for-profit hospital chains. In Module 5.4.1, Professor Leidl will introduce two clinical areas in which health economics could inform the development of practice guidelines: the recently "rediscovered" drug treatments to eradicate Helicobacter pylori (hp), thought to be one of the causes of dyspepsia, peptic ulcer and gastric cancer, and the newly discovered combination drug treatments for HIV disease. Decision analysis could inform whether eradication treatment should generally be offered to all dyspeptic patients found hp-positive, irrespective of whether there is evidence of further disease, and econometric analysis could inform whether to fund combination treatments involving protease inhibitors given its implications for public budgets. Consider now the case of a practice guideline for caesarean sections, the implementation of which has been extensively studied by Jonathan Lomas and colleagues (2). This guideline generally recommended a reduction in the use of caesarean sections and specifically recommended that women who have had a caesarean section previously should be given a trial of labour. One year after the release of this guideline, 94% of obstetricians were aware of the guidelines, 67% of their responses to knowledge questions were correct, and 85% of them agreed with the guideline (they may not have known what was in the guideline but they agreed with it!). According to obstetricians' own reports, the caesarean section rate among women who had previously had caesarean sections had dropped from 72.1% to 61.1%. However, according to more objective records, the caesarean section rate in these women had only dropped from 94.5% to 91.0%. Disappointed with these results, a team of researchers at McMaster University conducted an experiment to determine how best to improve the implementation of this practice guideline. They randomly allocated obstetricians to receive: (i) no intervention (the control group), (ii) an audit of their practices with regard to caesarean section and the feedback of these results to them, or (iii) the opportunity to interact with an opinion leader. For the latter, an opinion leader in each community was selected and educated about the key messages from the guideline. The opinion leaders then passed on these messages to their obstetrical colleagues in routine encounters, both formally (at medical rounds) or informally (even on the golf course!). The caesarean section rate dropped by 4.7% in the control group, 6.7% in the audit and feedback group, and 11.9% in the opinion leader group. Something (or many things) that the opinion leaders did seemed to have made a difference. IV - 10 Learning to live with Health Economics As a second example of a health policy, consider a legislative act or a regulation that would remove a ban on user fees so that health care providers could charge patients for services either instead of or in addition to the fees that they already received through public or private programmes. Such a policy regarding user fees can be thought of as a specific case of health care financing policy. In Module 3.3.1, Professor Stoddart introduced user fees as one legislative area in which health economics could inform the development of public policy. The income–expenditure identity which he described could be used to highlight the effects of increasing direct charges to users on utilization of services and the incomes of health care providers. Several factors have made it unlikely that a ban on user fees would be removed in a jurisdiction such as Canada. First, as the income–expenditure identity suggests, there would be losers as well as winners. The losers would include the sick and the poor (who are often one and the same); these individuals would be likely reduce their use of needed services and feel the impact, as a proportion of their income, to a greater degree. The winners would include the healthy and the wealthy, as well as health care providers whose incomes would rise if a ban were lifted. The losers would tend to outnumber the winners. Second, the decision-making structure for health policy in Canada and

the visibility of decision-making on this issue make lifting a ban particularly difficult. With a constitution and a legislative act that gives the federal government the authority to develop health care financing policy, even though the provincial governments administer the health care system, the federal government can reap the electoral benefits of banning user fees while not having to deal with public concerns regarding perceived funding shortfalls. Moreover, health care financing is a highly visible policy domain in its perceptibility (voters can usually identify that a policy has or could have an effect on them) and in its traceability (voters can usually link policies to individual politicians who they can reward or punish). Third, user fees have not been shown to achieve one of their principal objectives: to reduce selectively the inappropriate use of health care services. Faced with user fees, individuals stop seeking health care services for both the right and the wrong reasons. This empirical finding makes it difficult to argue that no one would be hurt by the introduction of user fees. Exercise 1 Before going further in the module, describe why you think practice guidelines sometimes are and sometimes are not implemented. Identify as many distinct factors as possible that might help or hinder the implementation of a particular practice guideline. Use the following questions as a guide for systematic discussion. • In what specific ways can the amount and type of information available to health care providers influence their uptake of a practice guideline? • In what specific ways can the incentives that health care providers face influence their uptake of a practice guideline? • In what specific ways can the regulations that govern the practice of health care providers (at the national, local or facility level) influence their uptake of a practice guideline? • In what specific ways can the public influence their uptake of a practice guideline? • In what specific ways can the personal views of health care providers influence their uptake of a practice guideline? You should feel free to add other factors which you feel are important. You are also requested to illustrate your answers to the above questions with examples, observations and statistics from your own countries. Now consider legislative policy. Describe why you think some legislative policies are developed and not others. Identify as many distinct factors as possible that might help or hinder the development of a particular legislative policy. Use the following questions as a guide for systematic discussion. • What specific groups can win and lose with a legislative policy related to the health field, and in what specific ways can these groups influence policy? • What decision-making structures exist for legislative policy related to the health field, and in what specific ways can these structures and interactions between them influence policy? • In what specific ways can values influence policy? In what specific ways can research influence policy? Again, you should feel free to add other factors which you feel are important and should illustrate your answers to the above questions with examples, observations and statistics from your own countries. A tool for understanding the implementation of clinical policy While some attention in recent years has focused on which health problems or issues warrant the development of clinical practice guidelines (e.g. caesarean sections instead of the treatment of dyspepsia or HIV disease) and on how the process by which guidelines are developed may influence their content (e.g. who sits on the guideline development panel, what types of information they use, and what rules are used when consensus cannot be reached), most attention has focused on the implementation of clinical practice guidelines. As the study of the caesarean section guideline suggests, practice guidelines are often not implemented by health care providers – they fail to receive guidelines, read them or act on them. By studying patterns in the implementation of practice guidelines, we can begin to understand why some practice guidelines are implemented and others not. Building on his study of the implementation of the caesarean section guideline, Lomas has pointed out the fundamental limitation of a simple dissemination strategy for a guideline: it fails

to acknowledge the range of environments in which health care providers work. A guideline represents only one component of a provider's educational environment. Providers also obtain information from journal articles, textbooks, continuing medical education sessions and colleagues. Moreover, the educational environment represents only one environment of many. Health care providers also face the following: • an economic environment which, for example, might include incentives such as higher fees for a surgical procedure such as a caesarean section than for a trial of labour; • an administrative environment which, for example, might penalize health care providers less severely for errors of commission (doing something unnecessarily) than for errors of omission (failing to do something); • a community environment which, for example, might put public pressure on health care providers to take a particularly aggressive approach to management when a pregnant woman and her baby are involved; • a personal environment which, for example, might include a bad experience with trials of labour. Picture a health care provider who has to present the pros and cons of a caesarean section to a woman in labour and her husband. While the clinical practice guideline might suggest a trial of labour, other aspects of the provider's educational, economic, administrative, community or personal environments might suggest a caesarean section. In an ideal world, all of these pressures would point in the same direction – and in ideal worlds, practice guidelines are probably fully implemented by IV - 12 Learning to live with Health Economics every health care provider. In the real world, efforts are made to reorient as many of these environments as possible so that they support the implementation of practice guidelines. Interventions by opinion leaders probably work in part because these individuals can help to make sense of guidelines in the light of these environments. The same holds true for academic "detailers", the "public" equivalent of pharmaceutical detailers.2 The questions in the first half of Exercise 1 and the environments described above, taken together, provide a framework for considering why some clinical practice guidelines are implemented and others are not. Practice guidelines are more likely to be implemented when large amounts of highquality information from a range of sources support the action or inaction suggested by the practice guideline, when financial incentives reward the action or inaction suggested by the guideline, when regulations make possible the action or inaction suggested by the guideline, when public pressure is either non-existent or supports the action or inaction suggested by the guideline, and when personal experience make the health care provider comfortable with the action or inaction suggested by the practice guideline. A tool for understanding the development of legislative policy While some attention in recent years has focused on which health problems or issues warrant the development of legislative policy (e.g. choosing to develop health care financing policy rather than a policy for the remuneration of health care providers) and on the implementation of legislative policy, most attention has focused on why some policies are developed and others are not. As the discussion of user fees suggests, legislative policy in some domains may rarely be changed, while in others it may be changed quite regularly and in predictable ways. By studying patterns in the development of legislative policy, we can begin to understand why some policies are developed and others are not. Three factors are typically cited to explain action or inaction: interests, institutions and ideas. Consider interests first. Because any policy will provide benefits and impose costs (i.e. some will win and others lose), many voters and interest groups will have a reason to ensure that their interests are taken into account in policy-making. However, because some policies provide concentrated benefits or impose concentrated costs, voters and interest groups with more to gain or lose have more reason to seek to influence the policy-making process than those with less to gain or lose. Next consider institutions, which includes both formal decision-making structures and past policies. These institutions determine

the rules within which ideas and interests develop and policies are made. Some policies may be more likely to be developed in jurisdictions with particular features (e.g. federalism with shared authority for health care) or with particular policies already in place (e.g. a ban on user fees for health care services). Finally, consider ideas, which includes values (i.e. views about how the world should work) and empirically testable or tested hypotheses about how the world actually works. Some policies may be more consistent with some values and empirical “facts” than others, making these policies more likely to be developed. 2 Academic “detailing” refers to university-based educational outreach (see, for example, Soumerai, S.B. & Avorn, J. Principles of educational outreach (“academic detailing”) to improve clinical decision making. Journal of the American Medical Association, 263(4): 549–556 (1990). The term comes from the pharmaceutical sector: drug representatives who meet one-on-one with physicians are called detailers. Whereas pharmaceutical company detailers act in the interests of their firm, academic “detailers”, by passing on accepted scientific knowledge, act in the public interest. Learning to live with Health Economics IV-13 Now let’s return to the issue of user fees for health care services. First, as outlined by Professor Stoddart in Modules 3.3.1 and 3.4.2, the losers from removing a ban on such fees include the sick and the poor. The winners include the healthy and the wealthy, as well as those people who derive their incomes from the provision of health care goods and services, and from the management and overhead components of the health care system. The latter include the employees, shareholders, lawyers and accountants of private insurance firms, pharmaceutical firms, medical equipment suppliers, and forprofit managed care firms. Second, to take the example mentioned previously, the division of authority between the federal and provincial governments in Canada and the visibility of health care financing policy-makers makes lifting a ban particularly difficult. Third, user fees have not been shown to reduce selectively the inappropriate use of health care services, so that the policy cannot be argued to have no effect on the sick. Health policy analysis, like any field, has its pet explanations at any one time. Interest-based accounts dominated explanations in the 1970s. Institution- and idea-based accounts dominate today. Nevertheless, all three factors warrant consideration to explain why some policies are developed and others are not. Often the answer lies in the interaction between all three factors. The questions in the second half of Exercise 1 and the three factors described above, taken together, provide a framework for considering why some policies are developed and others are not. Policies are more likely to be developed when the benefits are concentrated among more influential groups and when the costs are diffused across less influential groups, when decision-making structures concentrate influence in a small number of individuals at the same level of policy-making and
5 when policies are less visible (especially to those who will have costs imposed on them), and when both values and empirically tested “facts” support the policy. Health economics can provide many of these “facts”. Exercise 2 Using today’s local newspaper (which could be the same one you used in the exercise for Module 2.2.2), select one major news story concerning a policy developed by government with health as a primary objective. Analyse who wins and who loses (and who might have won or lost under other possible alternatives, including the alternative of the status quo), what are the rules of the game for developing policy in this domain, what are the (explicit or implicit) values of the policy-makers, and whether and how they used research evidence to inform their decision. Repeat this exercise for a government policy or decision which has health as a consequence but not as a primary objective. Conclusion: from understanding to action For people seeking to achieve the health for all targets, these insights can be used to assess the feasibility of change and to establish a strategy for bringing about change if it appears feasible. For example, they may have a particular clinical practice guideline that they would like to see implemented. The first step

would involve an analysis of the educational environment within which the target clinicians function. The second step would be to use this knowledge to establish implementation strategies for improving the chances that the practice guideline will be adopted. Sometimes these strategies might include modifying financial incentives (i.e. the economic environment); at other times they might involve changing a hospital policy (i.e. the administrative environment). IV - 14 Learning to live with Health Economics More likely, given the focus of the health for all targets, motivated individuals or groups will have a particular policy that they would like to see developed. The insights from this module, as well as those from another resource devoted to this issue (3), may prove helpful here. The first step would involve a stakeholder analysis to determine who would win and who would lose and what this would mean for the political feasibility of the proposal. Stakeholders in the health sector can often be grouped according to whether they are providers (e.g. hospitals and physicians), consumers (e.g. disease-specific patient groups), economic groups (e.g. business associations), ideological groups (e.g. political parties) or health development groups (e.g. voluntary aid groups). The power of each of these groups should be assessed, both in terms of the tangible sources of their power (money, organization, people, votes and skills) and the more intangible sources (information, access to the media, legitimacy). In addition, their positions and commitment to these positions should be assessed. The second step would be to determine the rules for decision-making and whether values and empirically tested “facts” support the policy. For example, some decision-making structures lend themselves more easily than others to penetration by stakeholders. A structure in which policies are developed within policy subsectors often makes it easier for stakeholders to get a seat at the policymaking table. Many decision-making points involving many different decision-makers can make it easier for a single stakeholder group to veto a policy. Some policies may also be less visible than others and thus less likely to attract the attention of groups other than the main stakeholders. The final step would be to use the knowledge from the first and second steps to establish political strategies for improving the chances that the policy will be adopted. The first such strategy is bargaining. Bargaining can include promises (I’ll give you something in exchange for your help), trades (I’ll do something for you on another issue if you help me on this issue), threats (if you don’t do this, I won’t work with you again) and deals (I’ll do this if you do that). The second strategy involves strengthening the position of supporters (e.g. by giving them money) and weakening the position of opponents (e.g. by distracting them with another issue). The third strategy involves mobilizing unorganized supporters and deterring organized opponents. Policy development is a complex game. It pays to know who you are playing with, the rules of the game, and what kind of support you can build on the basis of shared values or “facts”. References 1. KINGDON, J.W. Agendas, alternatives and public policies, 2nd ed. New York, Harper Collins College Publishers, 1995. 2. LOMAS, J. Retailing research: increasing the role of evidence in clinical services for childbirth. Milbank quarterly, 71: 439–476 (1993). 3. REICH, M.R. Political analysis and political strategies. Boston, MA, Harvard School of Public Health, 2001 (unpublished data). Further reading BODENHEIMER, T.S. & GRUMBACH, K. Understanding health policy: a clinical approach, 2nd ed. Stamford, Appleton & Lange, 1998. Guidelines in health care practice. Report on a WHO Meeting. Copenhagen, WHO Regional Office for Europe. EUR/ICP/POLC 020204, 1997. Learning to live with Health Economics IV-15 IMMERGUT, E.M. The rules of the game: the logic of health policy-making in France, Switzerland, and Sweden. In: Steinmo, S. et al. Historical institutionalism in comparative analysis. Cambridge, Cambridge University Press, 1992. SCHRIFTENREIHE DES BUNDESMINISTERIUMS FÜR GESUNDHEIT. Guidelines in health care. Baden-Baden, Nomos Verlagsgesellschaft, 1997.

STONE, D. Policy paradox: the art of political decision-making. New York, W.W. Norton and Company, 1997. TESH, S.N. Hidden arguments: political ideology and disease prevention policy. New Brunswick, Rutgers University Press, 1990. 4.2.2 Political management of public health Keith Barnard and Chris Selby Smith3 Key messages • Public health definitions typically reflect one of two perceptions. The first, narrowly focused, conception refers to a range of technical services, such as environmental health and communicable disease control. The second conception is broader. It covers the organized efforts of society to protect and promote the health of the population, to prevent and control disease, to mitigate the effects of disability and handicap, and to ensure the wellbeing and care of those with chronic health problems and the terminally sick. Public health in this second sense equates with the values, operating principles and objectives of WHO's health for all (HFA) strategy. • Primary health care, as elaborated in the Declaration of Alma-Ata (http://www.euro.who.int/ AboutWHO/Policy/20010825_2), provides a set of principles to be adapted by each society to pursue the goal of health for all. Primary health care identifies actors to be involved and ways of mobilizing resources to ensure that essential tasks are undertaken to achieve the highest attainable level of health. The underpinning ethic is that of equity (in the sense of fairness). • Public health management involves formulating and implementing action plans that: – address the health problems of a given community, as identified by epidemiological and other assessments of need; – mobilize, deploy and use resources efficiently to achieve given ends which meet political, social and cultural expectations; – monitor the impact of services and make appropriate adjustments; – scan the operating environment for early warning signs of developments that could affect what needs to be done and how it is done; – are based on maintaining close contact with all operating partners, community groups and opinion leaders; and – are supported by a clear strategy of public advocacy, public information and public education to promote informed choice. 3 This module was prepared by Keith Barnard of Gothenburg, Sweden (e-mail: barnard@tripnet.se) and Professor Chris Selby Smith of Monash University in Australia (e-mail: Chris.SelbySmith@BusEco.monash.edu.au). • Public health management makes prudent use of economic concepts and reasoning (and of economists as advisers). It recognizes where they are helpful, but is also aware of the limits of their frame of reference and the assumptions they make to live within it, and the questions to which they cannot provide usable answers. Tutors' notes This module is concerned with the political management (by government or organized society rather than in the narrower party political sense) of public health, where public health relates to the organized efforts of society to protect and promote the health of the population. It
5 equates with the values, operating principles and objectives of WHO's health for all strategy, adopted by WHO in the Declaration of Alma-Ata in 1978 (1), later endorsed by the World Health Assembly and reaffirmed in the Ljubljana Charter on Reforming Health Care in 1996 (2), the World Health Declaration adopted by the world health community at the 51st World Health Assembly in May 1998 (3) and the two WHO publications setting out HEALTH21, the health for all policy framework adopted by the WHO Regional Committee for Europe in 1998 (3,4). 4 Primary health care is the means by which the goal of health for all is to be pursued. This remains the foundation of WHO policy, so that this module has close links to others throughout the learning materials. The essence of primary health care is putting into practice at the local level a coherent, rational and broad-ranging health policy to promote and protect, maintain and restore the health of all people in a community. Its underlying ethic of equity implies preferential consideration for the disadvantaged and the vulnerable. The module is organized in four parts. 1. The first part outlines the scope of health for all. 2. The second part is concerned with the particular contribution of economics to

HFA and primary health care. Exercise 1 discusses the contribution which the economic way of thinking (and economists) can make. It considers the contribution from an overall perspective and from the specific viewpoints of four major stakeholders in the health care systems of WHO's Member States. 3. The third part focuses on how the HFA framework can be used to improve outcomes, including the tension between imagination or vision and realism, noting that it is practice rather than rhetoric that determines how the health agenda is set and acted upon. Exercise 2 asks participants to consider the extent to which the HFA framework assists decision-makers to address the political and ethical challenges involved in socioeconomic policy-making for health by reference to a topical example in their own countries. 4. The fourth part discusses certain factors which can improve the chances of success, since the overall purpose of the political management of public health is to identify the innovations to be adopted, and then to secure the commitment of all those interests whose involvement is necessary to achieving them. Exercise 3 invites participants to reflect on the key health, political, economic, social and other factors for success in handling the political management of public health. 4 The earlier of these: Health21 – an introduction to the health for all policy framework for the WHO European Region (4), sets out the essence of health policy in an HFA context. The later – HEALTH21: the health for all policy framework for the WHO European Region (5) – provides the evidence and rationalefor specific policy proposals and is in effect a planners' manual. Learning to live with Health Economics IV- 17 The module is primarily for the purposes of appreciation and appraisal rather than analysis. It can be used by each of the four groups of users for whom the learning materials have been developed. For example, policy-makers at national, regional or local levels (both political, and administrative and managerial policy-makers) can use the module in developing, implementing and evaluating their strategies, while managers, practitioners and other concerned groups can understand more fully what is required, how needs are being met and where their influence can be most effectively applied. The scope of health for all The intention behind WHO's health for all concept is to encompass within one policy framework long-term objectives relating to: • healthy living by a population educated in health problems and the appropriate responses; • a healthy environment providing shelter, food, water and sanitation, with good economic opportunities and freedom from the fear of violence; and • an accessible, rational and comprehensive system of preventive treatment, care and rehabilitation services. HEALTH21 advocates specific proposals for preventing and controlling disease and injury to reduce their incidence, prevalence and impact. It identifies multisectoral strategies to ensure that physical, social and other environments are more health-promoting, to enable people to adopt healthy patterns of living, and to provide health services that are efficiently run, responsive to people's needs and produce health gains through improved outcomes. It proposes strengthening the knowledge base, mobilizing partners for health improvement, and managing the process of policy development and implementation in an efficient but sensitive way. The aim is to stimulate and support countries and communities, enabling them to develop strategies that address the determinants of health and result in: • socially responsible and sustainable health development; • greater equity in health; • higher levels of health throughout people's lives; • a reduced burden of sickness and injury through the unlocking of new resources for multisectoral action; and • high-quality cost-effective health care. WHO's health for all strategy was originally adopted by the World Health Assembly to give effect to its resolution WHA30.43 in 1977, which committed Member States, at least morally, to action. They undertook to pursue as a social policy goal the attainment of a level of health by all their peoples that would enable them to lead socially and economically productive lives. This commitment was reaffirmed by the World

Health Assembly in resolution WHA51.7 of 16 May 1998 and by the WHO Regional Committee for Europe in 1998 in resolution EUR/RC48/R5 on the Health for all Policy Framework for the European Region for the 21st Century. The underpinning ethic, made clear in the original HFA resolution, is that of equity. Good health is a right to be enjoyed by all (irrespective of the argument that a high level of population health produces benefits in terms of social and economic development). This means that action taken and the allocation of resources require that preferential consideration be given to those whose needs are greatest and whose health could be improved the most. IV - 18 Learning to live with Health Economics In the terms of the Declaration of Alma-Ata (1), and later endorsed by the World Health Assembly, primary health care is the means by which the goal of health for all is to be pursued. This remains the foundation of WHO policy. The essence of primary health care, as promulgated in the Declaration of Alma-Ata, is putting into practice at the local level a coherent, rational and broad-ranging health policy to promote and protect, maintain and restore the health of all people in a community. The task is to sustain people's capacity for independent living, their integrity and self-respect, and to seek to empower people individually and collectively to promote their own health and to make rational use of health care services. The values underpinning the policy are: • health as a human right and people's responsibility to use the health potential they have; • equity in health and solidarity in action; and • participation of people and groups in decision-making and implementation and their accountability for action. The proper objective of health care must be to provide services equitably to those in need of them. This is irrespective of the pattern of ownership of institutions or how services are funded. At the same time, society and its policy-makers should avoid placing an unreasonable burden on physicians by expecting them to treat every problem presented to them even when the causes are not biomedical. Rather, society and its policy-makers, in WHO's view, must ensure that actions focus on the underlying factors, the lifestyle and environmental determinants of the health of communities, and not just the presenting problem. Central to the HFA concept of health policy is the emphasis on the determinants of health and the importance to economic and social development of a population enjoying good health, defined as the capacity to lead socially and economically productive lives. This does not, of course, make the minister of health and the health sector responsible for everything. However, they need to recognize that they have a crucial advocacy role. It is their responsibility to make the argument for health in the political sphere, including to other ministers and decision-makers in all sectors, whenever and wherever it is needed. To undertake this advocacy role successfully they need negotiating and diplomatic skills so that they can devise appropriate strategies jointly with actors in the different sectors. It is also their responsibility to ensure that health policies rooted in HFA, not just for health care but for the broad field of health protection and promotion, are developed, adopted and implemented at all levels. The primary health care strategy and its effective implementation require technical expertise of different kinds and knowledge of people's circumstances and living conditions. It shows equal concern for the sick and the currently well. The ethic of equity implies preferential consideration for the disadvantaged and vulnerable. Primary health care is teamwork and collaboration, such as general medical practitioners working with community nurses and others. Each of the participants and groups has their own particular skills and responsibilities. In some tasks they cooperate with professionals from other sectors. Primary health care workers offer prompt, professionally sound treatment locally for conditions that do not require more specialized attention, such as those involving the use of hospital-based technology. They also need an effective referral system that gives their patients access to more specialist services when needed. They function as agents of their patients in relation to the rest of the health care system. When that role is

properly discharged, it should lead to a more rational use of all specialist care and indeed of all resources. Learning to live with Health Economics IV- 19 The health for all policy also included Europe-wide targets and indicators by which progress is measured periodically and in relation to which remedial action can be taken if required (5,6). However it is done there is a need for continuous monitoring and regular evaluation of the actions which are taken to achieve health for all (and of relevant developments in the external operating environment). Mechanisms need to be provided for the periodic review of policies and practices, so that appropriate changes can be made when required. Although governments differ in the arrangements they make for the provision of health and social care, the propositions in the 1978 Declaration of Alma-Ata (1) were formally accepted by WHO Member States in the World Health Assembly. They were reaffirmed in the 1996 Ljubljana Charter (2). This immediately raises the issue, how can HFA really mean care for all (and not just for some)? Perhaps there can never be certainty, but it is only even possible if the following two conditions are satisfied, and any health care reform should be judged against them. 1. First, are services financed according to the fundamental principle of equitable collective funding, so that users' contributions, whether by taxation, insurance premiums or direct payments, are determined in relation to their ability to pay? However it has been generated, the aggregate level of funds available must be sufficient to make reasonable provision to meet the essential care needs of the population. The same principle applies in the allocation of resources in other respects, such as to geographical areas and health care providers. 2. Secondly, are services organized and managed with the purpose of achieving the highest possible equity of access to and quality of care and treatment, according to need, not ability to pay? This should apply, for example, across geographical areas and socioeconomic status. However, equity does not mean equality, literally the same for all, but fairness. Attention is also paid to efficiency, effectiveness, responsiveness and quality of care. The intention is to make the best use of resources in order to achieve the best attainable outcome from health care interventions. This includes reduced disability, better quality of life and user satisfaction, and wider considerations such as seeking to restore a capacity for independent living and enabling citizens to play a full part in society. The twin criteria of equity and efficiency were discussed in more detail earlier in the learning materials. When applied in practice they require decision-makers to clarify their sense of priorities. In particular, this means stopping what is reasonably judged to be unnecessary and (in terms of results) ineffective activities. It is to focus on what is in tune with the values and expectations of the community and, recognizing what is affordable, to make a defensible use of the available resources. In the World health report 2000 (7), stewardship is ranked above the other three functions of a health system (service delivery, input production and financing) "... for one outstanding reason; the ultimate responsibility for the overall performance of a country's health system must always lie with government. Stewardship not only influences the other functions, it makes possible the attainment of each health system goal: improving health, responding to the legitimate expectations of the population, and fairness of contribution. The government must ensure that stewardship percolates through all levels of the health system in order to maximize that attainment". Stewardship is "the very essence of good government" (7). Chapter 6 of the World health report 2000 examines certain aspects of how the public interest is protected. • What is wrong with stewardship today? The report concludes that "stewardship has major shortcomings everywhere" (p.120). IV - 20 Learning to live with Health Economics • What vision for the future should be encouraged and pursued? How should the rules or incentives be set? How can compliance be encouraged? • How is information to be developed, collected and disseminated? How is intelligence to be exercised and knowledge shared? • Who should do what

in relation particularly to strategies, roles and resources? • What are the key challenges, how can improvements be made and, in a world of limited resources, what are the critical messages to facilitate better functioning health systems? The contribution of economics Robbins' definition of economics was "the science which studies human behaviour as a relationship between ends and scarce means which have alternative uses" (8), while Oskar Lange saw it as "the social laws governing the production and distribution of the material means of satisfying human needs" (9). These definitions remind us that economic concepts and reasoning are a thread running through HEALTH21 (3) and the thinking that lies behind it. HEALTH21 is a reasoned presentation of possibilities (whether they are called ends, wants or needs) which, taken together and if satisfied in full, would result in everyone achieving their highest attainable level of health, i.e. WHO's constitutional objective. While the document is intended to be technically realistic, its purpose is more about clarifying proposals for action in the WHO European Region than addressing constraints on action such as limited financial and material resources ("scarce means"). The task of the policy-maker, the administrator implementing policy and the health practitioners exercising their professional skills, is to pursue HEALTH21 objectives as far as these are practicable. At the same time they will be faced with constraints in their particular situations. Among the other resources available to them, they will look to economists for advice. They will be aware that economists cannot and should not make decisions for them. The choice of ends, and of means having different consequences, are policy decisions, and as such are the business of politics and of wider decisionmaking processes in society. Economists in their professional role are (or should be) neutral between alternative political choices. Economists are in the business of asking particular sorts of question and providing particular sorts of information. The questions are relevant to issues that policy-makers, administrators and practitioners must confront in coming to a decision. The information from economists can assist them in addressing those decisions. Economists look particularly at alternative ways in which ends can be achieved, the implications of those ends, and the consequences of choosing different means. Prudent policy-makers, administrators and practitioners will also be aware when an economist is involved as a stakeholder (for example, as a citizen or local resident) in the choices that are to be made. This will make it harder for the economist to be neutral. Policy-makers, administrators and practitioners know that economists, unlike scientific advisers, will not have the benefit of any controlled experiments to support or corroborate the advice they give; that many aspects of what they advise on may not be susceptible to measurement; and that their models (however sophisticated and comprehensive) are dependent on assumptions and estimates. In fact, of course, a wide range of social sciences are concerned with the study and understanding of human behaviour, the decisions and actions people take. Perceptive decision-makers who make use of their results will be aware that the different social science disciplines sometimes work in parallel, sometimes in competition and sometimes in collaboration. Perceptive social scientists have concluded that their impact on decision-makers is enhanced when they address issues together, making complementary contributions to an improved understanding of causes and consequences. It has been noted that "different social and behavioural sciences are in the main distinguished not by the events they study, but by the kind of relation between events that they seek to establish. Events themselves are neutral to the different disciplines" (10). The implication is that "disciplinary frontiers (as artificial barriers between subjects) should be vibrant channels of communication, not iron curtains of mutual unintelligibility and mistrust; [the] narrow minded approach misconstrues the complementary aim and interests of these cognate subjects" (11). This should be an issue of great urgency for all social scientists with an interest in health since, as a general rule,

significant groups of potential users of their work are not interested in the territorial disputes of social science theory. These groups include: politicians as health policy-makers; the permanent civil servants who are advising on and executing policy; the managers responsible for the operation of health care and other health related institutions and agencies; and individual health care practitioners and users. In their different roles these groups are concerned with the pragmatic handling of difficulties, responding to pressures and exploiting opportunities to achieve desired change. The more the advice of social scientists is based on abstract theory (and therefore suggestive of the world not as it is, but as they think it ought to be) and the less it is rooted in observed experience of actual behaviour, the less likely is it that the decision-makers will take notice, unless this advice coincides with their own existing values-based perceptions. It is worth noting that, while social scientists, including economists, are seeking to offer rigorously generated information, as additions to knowledge, decision-makers contemplating choices in their particular operating environment are often interested in intelligence. This is the distillation of stories and statistics, hard (verifiable) and soft (unconfirmed but plausible) evidence from multiple sources in different forms or formats, which provides a usable picture of what is wrong or what change is possible and how changes could be achieved. It is as well that both decision-makers and scientists recognize the difference and understand each other's mindsets. The underlying assumption, nevertheless, is that the more extensive knowledge becomes through the analytical frameworks and research findings provided by economics and other social sciences, the more likely will it be that institutions can be reformed and policies reoriented with "good enough" assessments of the probable consequences of any changes that are proposed. But this is a hope rather than a guarantee. Despite the limitations, there will be many issues on which economists' contributions will be found helpful, although economists have often found it necessary to develop their concepts to apply them satisfactorily to the health field. Included in these concepts would be: • public goods in the health field; • the notion of consumer sovereignty applied to health care, including the feasibility and limits of user choice; • the effects of dissemination to and use of information by users of health services, clients receiving health advice, and consumers purchasing health products; • monopoly, such as public ownership of institutions, professions as monopoly providers, and national health insurance agencies as monopsonists; • laissez-faire and collectivism as appropriate economic systems for the health field; • the concept of "utility" applied to the health field; • pricing in health care; IV - 22 Learning to live with Health Economics • the principle of substitution; and • returns to scale and the division of labour. Seven key HFA concepts and issues for the economist are identified. First, the importance of values (what is held to be good) and principles (what needs to happen or be in place to ensure that the values are given practical effect). There is a crucial coherence in HFA values and principles. For example, an inefficient intervention is an unethical and inequitable measure, because it uses resources that could have been deployed equitably and effectively there or elsewhere. Secondly, there is an issue about making the concept of responsibility operational. This includes clarifying what is properly an individual responsibility, avoiding simplistic assumptions about what decisions individuals can or will make for themselves and what requires collective action. In addition, there are matters concerning how the conditions can be created to enable individuals to take decisions and actions that could enhance their health, in particular how to develop the co-production concept. Thirdly, economics can assist stakeholders and decision-makers in the health care system to clarify the nature of outputs and outcomes. This includes distinguishing between those that are directly health-related and those that have another beneficial effect; between those that are visible and those that are invisible or intangible; between those

that are intended and unintended; and between positive and negative outputs and outcomes. These distinctions often have substantial implications for the action to be taken by stakeholders. Fourthly, economics can assist decision-makers to understand the nature of costs (whether or not these can be usefully given a monetary value), in particular the costs of any change (e.g. of introducing new technology or new working arrangements in health care institutions) and of inappropriate health care reform. Economists also tend to raise the issue of distribution – who gains and who loses from particular arrangements or proposed changes? Fifthly, economists emphasize the crucial importance of knowledge, including for informed choice and for advocacy. It can be valuable to appreciate that actors in different sectors may have different logics which they bring to bear, including in assessing situations facing the health sector. Sixthly, since economists are concerned with choice, they tend to understand the nature of the pressures on decision-makers and the costs and benefits to them of making or not making (postponing or avoiding) a decision. In some situations, such as when there is gross inefficiency in the use of resources, it may be possible to make big efficiency improvements and thus achieve given outputs with fewer resources (or a greater output with the same resources) without sacrificing other desired outputs or outcomes. In other situations, however, economists are likely to stress that more of one (desirable) outcome can only be achieved by accepting less of another. Finally, it is important to see the economic dimension in the context of the bigger picture. There are particular contributions from the insights and methods of economics to the pursuit of the goal of health for all. However, the skills and insights from other disciplines, such as epidemiology, operational research, political science and sociology, are also valuable and often complementary. A study of the principal objectives of HEALTH21 and its underpinning values and principles confirms the significant contribution that health economics can make. When economists are sensitive to the environment of decision-making and action they tend to find policy-makers, administrators and practitioners receptive to the contribution of health economics thinking and to the application of its methods in the development of policies and strategies and in the planning and management of services. Interestingly, the broad way of thinking adopted by economists can be as valuable as the technical Learning to live with Health Economics IV- 23 minutiae, e.g. the costs compared to the benefits of alternative uses of scarce resources; decisionmaking at the margin; the implications of varying preferences, including for risk and uncertainty; and the distributional issues relating to who gains and who loses from adopting particular courses of action. Exercise 1 Discuss the contribution which the economic way of thinking (and economists) can make to: (i) the clarification of HFA objectives (ii) the means which may be used to achieve them (iii) the assessment of the extent to 5 which they are achieved. Consider the contribution of economics from the viewpoint of four stakeholders in the health care system: (i) national or regional policy-makers and planners (ii) managers of health care facilities and services (iii) health care professionals, such as doctors, nurses, pharmacists or dentists (iv) the users of health care services. Using the health for all framework The health of the people is really the foundation upon which all their happiness and all their powers as a state depend. Benjamin Disraeli5 A distinction has been drawn between economic policy designed to create wealth and social policy designed to create harmony, or at least to create greater social cohesion. The political reality is that, in the hierarchy of values that steers government and ministerial careers and reputations, it is the portfolios of internal and external security and the management of the economy that enjoy primacy. Health and other aspects of social policy are clearly subordinate. In consequence, one underlying concern of the HFA movement has been to secure greater political visibility and awareness for HFA objectives, and recognition by governments (not just health ministries) of their importance for social and economic development. These have been seen as

preconditions for effective implementation of HFA. If Disraeli's view of health and the state is endorsed, should there be agreement with Beveridge that collective, responsible social action is preferable to economic individualism in the pursuit of human wellbeing? We should regard want, squalor, disease and ignorance as common enemies of all of us not as enemies with which each individual may seek a separate peace, escaping himself to personal prosperity while leaving his fellows in their clutches. That is the meaning of social conscience – that one should refuse to make a separate peace with social evil. (12) 5 Speech, 23 July 1877. In domestic politics the British Conservative Prime Minister Benjamin Disraeli was associated with social and political reform, including the 1875 Public Health Act. IV - 24 Learning to live with Health Economics Health sector policy-makers addressing the political and ethical challenges in socioeconomic policy-making have the HFA framework with which to start. HFA has its critics; but it is in fact a carefully built structure which uses public health traditions, epidemiological evidence, technological trends and forecasts, moral appeal and political optimism. Effectively and persuasively presented, HFA can have considerable operational appeal. It can be a catalyst for increased collaboration between the health service and other social service agencies, private sector enterprises, various voluntary organizations and community groups, and the media. Such collaboration also implies joint information efforts for planning and monitoring purposes about the population to be served and their needs, and about present policies and provision of services and their effects. It should also be possible to show what can be done with little or no extra expenditure if there is good coordination and people are motivated. The policy goes well beyond the health sector agenda perceived by the medical profession – or often by politicians and the general public. Yet it has survived. This is, or at least may be, partly because while it is kept in the most general terms no Member State wishes to be in opposition. As the product of an intergovernmental international organization, formally endorsed by its constituent Member States, HFA must be projected as politically neutral or universal. On balance however, the HFA strategy is collectivist, not least by its open espousal of equity as a fundamental objective and prerequisite for health. And, while the strategy must be adapted to a country's or a community's circumstances if it is to be properly implemented, too selective an adoption of its component parts will destroy the overall coherence of the strategy. It is important to be aware of the interdependence of the different levels of policy-making. If the principle of subsidiarity is applied, decisions will be taken at the most appropriate level for the object of each decision. Generally speaking, the nature of the action, the actors involved, and the way decisions are arrived at will vary according to a country's constitution, practice, circumstances and traditions. Subsidiarity implies that, to the greatest extent possible, detailed policy-making and action are a local matter, although often operating within a framework that has been determined or influenced at other levels. This includes several dimensions, such as the physical environment, housing, communications and transport, work and economic activity, medical services, social history and tradition, lifestyles, culture and education, and other people-oriented activities and processes, creativity and tolerance. Against this background the HFA agenda can be fashioned by identifying, analysing and responding to collective needs. The decisions taken will have short-term effects and possible longterm consequences. Both need to be weighed before decisions are taken. They can broadly be classified as the: • musts – such as services and measures to ensure a safe environment, which minimizes unacceptable hazards to public health; • choices – creating alternatives, such as healthy homes that people live in by personal preference; and • challenges – developing appropriate policy responses to acknowledged social problems with health consequences: for example, how can an alienated group in the population be integrated into the community, or how

can the social and psychological consequences of unemployment be mitigated? There are certain realities to contend with in many countries: a culture of sectoral isolationism; the relative lack of power and status of health ministries, and the political disadvantage of health development being perceived as a limited concept which is unable to command sustained political and Learning to live with **Health Economics IV**- 25 governmental attention. There may be an indifference among political or bureaucratic decision-makers towards scientific knowledge as the basis for making better decisions – they may prefer other rationales. The approaches to these realities can be arrived at by working through a series of propositions for HFA policy formulation. These point to key success factors, which are discussed in the next part of the module. Although derived from an analysis of direct experiences, they are in the form of an ideal type and are not a blueprint simply to be endorsed and implemented. They are intended to help trigger discussion of practical strategies in particular local circumstances. They stimulate the search for alternative approaches when the conditions for success are not immediately met. In developing an effective approach to the political management of health policy, the health policy-maker is faced with four basic questions. What can be controlled? What can be changed? What can be influenced and how? What can be negotiated (or credit built up for later use)? In identifying the range of appropriate feasible actions (e.g. legislation, regulation, financial, education and research), the agency(ies) to be made responsible should also be identified, having first been assessed for their capacity to take action in the given situation. Policy-making and planning are a tension between imagination and realism. Although plans must be tempered by feasibility and the availability of resources, the initial starting point is generally the generation of ideas. Starting with realism tends to mean that no vision results. This is an important point, because within many countries the pressures for delay and compromise are incessant. Nor is there any sense of shared vision in most instances. For example, is a primary health care strategy: • the sum of measures designed to assist the achievement of three common interpretations of health (longevity, healthy behaviour and physical fitness; or the absence or cure of disease and access to medical care; or social equilibrium, contentment and satisfying relationships?); or • the operational coordination of health with other services, such as education and the environment?; or • the functional integration through a referral system of first contact care with increasingly specialized institutional medical services? It is the way these questions are answered in practice, rather than the rhetoric of policy documents, that determines how the health agenda is set and acted upon. Policy advisers and planners need to be sensitive to trends and concerns being generated both outside and within the health sector. In all events, the probability of opposition emphasizes the need to have in place a variety of tools for change
5 that involve both public and private actors. Maintaining the momentum for HFA is often a question of preparing defences against opposition. Arguments may be formulated on various bases. For example, the viability of the policy may be questioned at a political level, such as when particular vested interests (ranging from the manufacturers and distributors of products deemed to be harmful to health to the hospital with a high reputation which is threatened with a budget cut) seek to influence political decision-makers. Other arguments may be formulated at the institutional or professional level. For example, those in authority may be reluctant to encourage (or participate in) a controversy that could spark change – smooth-running organizations prefer to carry on as they are. Opponents may assert that there is no place or need for proactive or interventionist policy-making; the future is best left to the dynamics of the relationships between interests, or to the market; and in any event are not HFA objectives based on assumptions of doubtful scientific validity? In short, it will be alleged that it is all politically unrealistic and economically IV - 26 Learning to live with Health Economics unfeasible. A third set of objections may emerge at the

sociocultural level. For example, objectors to HFA may maintain that nobody is really interested in health policy reform if they feel healthy and are satisfied with the available services. And if they are not, they will be concerned with quite specific worries. These could be based on perceptions of shortcomings in the operation of the health care system; or falling clinical standards; or anxiety prompted by the emergence of old-style public health problems, such as food safety linked to a serious loss of trust (e.g. Bovine spongiform encephalopathy, or mad cow disease, in the United Kingdom). Some objectors may even claim that HFA is a veiled form of “victim blaming”, since in emphasizing individuals’ responsibility for their own lifestyles and thus state of health, they are made the focal point for change. It tends to be easier to advocate (and, if necessary, defend) HFA-based objectives if they have emerged from an open debate among all groups with an interest (stakeholders). The active dissemination of information and promotion of public debate are essential tools in creating from below more political visibility for health-related policy issues, and strengthening the political will to treat health seriously as a public concern. It tends to be easier to counter opposition if there is a properly thought through rationale for a comprehensive and integrated approach which emphasizes connections and linkages between seemingly separate issues. For example, a cost-effective approach is the use of multiple coordinated strategies to address the shared causes of the major noncommunicable diseases, which together account for most morbidity, disability and mortality in industrialized societies (13). Of course, it may sometimes be politically expedient to present and explore certain issues separately, in order to win support for particular measures in public debate. However, that is a separate matter from keeping one’s own comprehensive frame of reference (i.e. systems thinking) as a policy developer, implementer and manager. If opposition is not at root a reflection of a perceived threat to specific interests, it may be possible to engage with the objectors, especially if it can be convincingly argued that their suspicion and opposition to HFA is based on a misconception or a misreading of the evidence. Exercise 2 To what extent does the health for all framework assist decision-makers to address the political and ethical challenges involved in socioeconomic policy-making for health in your country? Consider this issue in relation to: (i) a specific recent health policy or practice change (or proposal), preferably a controversial and substantial one; (ii) the different levels of decision-makers outlined in Exercise 1. Key success factors An effective approach to the political management of health policy and changes in health practice requires careful attention to three matters. First, it benefits from a multi-level, intersectoral process with specific agencies designated as responsible for securing initiation and implementation. The range of possible types of action (e.g. legislation, regulation, financial, education and research) together with the specific agency(ies) that would be responsible, either solely or in cooperation with others, should be identified and assessed for appropriateness to the particular circumstances which are anticipated. Secondly, an effective approach requires sustained political commitment, which means taking action when required. Major change generally takes a considerable period of time to accomplish. **If Learning to live with Health Economics IV**- 27 the key participants waver in their political commitment during the process (or it is thought that they might), the task of reform is more difficult and the defined objectives may not be achieved. Thirdly, there needs to be targeted dissemination of information on health, health problems and risk assessments, and on possible counter measures, with an assessment of their likely impact. The conditions for effective policy development include the following. • The availability of strong evidence about the size of the problem, its main features and the need for action that would be affordable and broadly acceptable in that environment. • The responsibility for protecting and promoting health (and where appropriate the need for joint, including

intersectoral, action) is acknowledged by actors outside the health sector at ministerial, managerial and operational levels. This is especially important where the proposed action requires intersectoral cooperation, involves major expenditure or is contentious among powerful groups. • The priorities, programmes, resource allocations and operating methods of the sectors involved can be reconciled or harmonized. This may not always be possible, but when it can be achieved it tends to make policy development more effective (and speedy), and effective implementation on a sustainable basis significantly more likely. A policy proposal is much less likely to be adopted as the preferred option if it is perceived as a “zero sum game” by any of the interests involved. The number of policy initiatives being developed in detail at any one time should also be limited so as to increase their impact. This helps to ensure that the focus of the relevant interests and participants is not dissipated among competing demands and their capacities overloaded. It is desirable that there be a reasonable probability of early visible and positive results from the initiative, so that a success can be demonstrated publicly and politically. The stock of goodwill is limited, and key stakeholders are unlikely to be willing to gamble it on risky innovations, especially if they are not central to their perceived interests. The options in HFA policy formulation can be organized in descending order of preference: • first, identifying to other sectors the mutual benefit in cooperation to achieve health development; • second, identifying a range of possible exchanges of favours with other sectors to induce them to cooperate; • third, arguing to other sectors that there is an overriding national, regional or public interest to be served in adopting health criteria in their policy formation; • finally, deferring attempts to engage with other sectors until the health policy-maker is in a stronger political position. In all circumstances, it is important to avoid a posture that would appear as health “imperialism” or an attempt to colonize other sectors. In summary, the approach means three things: (i) to identify the courses of action required, who are the interested parties to be involved and what consequences will follow; (ii) to seek political commitments, build networks and encourage grass-roots activities and support; and (iii) to negotiate action planning on specific issues with proper preparation and consultation and to build in agreed monitoring and evaluation procedures. This enables developments to be assessed promptly, remedial action taken when required and a virtuous cycle of consultative learning encouraged. If it is effectively and persuasively presented, HFA can have a substantial operational appeal. It can be a catalyst for increased collaboration between the health service and other organizations and groups, including the media. The valuable role that can be played by voluntary organizations and IV - 28 Learning to live with Health Economics individual volunteers is sometimes overlooked. Such collaboration also implies joint information efforts for planning and 5 monitoring purposes. Of course, different emphases may be effective with different groups. For example, some politicians may become more interested if the emphasis is on cross-national comparisons, particularly if these are given prominence by the mass media, while others may be persuaded by a bandwagon effect. Some interest groups may be persuaded by information about how their counterparts are being involved in other Member States and the desirable results that are being achieved. Sometimes a clear exposition of the available information may, of itself, begin to shape the tasks and persuade the responsible agencies, which means distilling evidence from all relevant fields to strengthen the empirical support for proposals. The arguments can be geared to reasoning with interest groups, but without resulting in contradictions between the statements which are made to different groups. Against this background the role of (local) health sector policy-makers and planners has several aspects. Three are emphasized here. The first relates to the analysis of local circumstances, highlighting those concerns which are of interest to the local population, and persuading other levels of government or agencies (in both the public and private

sectors) whose involvement or cooperation is required. The second aspect relates to spreading enthusiasm to other agencies, educating others (including health care professionals) by whatever means seem appropriate, lobbying for HFA concepts to be introduced into training programmes and using collaborative health systems research to enhance the credibility of HFA thinking. The third aspect relates to the use of even small successes to demonstrate the relevance of HFA. Prompt dissemination results in sharing successes and failures with others and facilitates learning, remedial action (where necessary) and improved health outcomes. There is no one method for these tasks. Each "entry point" must be tailored to the circumstances. The political, administrative and cultural framework is the determining factor. HFA must be demonstrated as being relevant to real concerns. Certain responsibilities, however, remain constant. • The distinction between policy (the content of a desired and intended action or set of actions) and politics (the process of debate and negotiation by which decisions on proposed actions are reached and implemented) must be clarified and maintained. • The focus of interest for which a policy is to be prepared (e.g. the intended beneficiary population or the intention of any proposed action or intervention) must be clarified and a framework for analysis of the policy constraints and for judging what is politically and administratively feasible (as well as desirable) must be developed. • Different approaches to priority determination must be recognized and the appropriate approach to apply in particular circumstances selected. A distinction is made between five types of criteria. The first involves health criteria, such as the reduction of mortality and disability using the most effective available technology. The second involves ethical criteria, such as minimizing preventable mortality, morbidity and disability, for example where an effective technology is available (within or outside the health sector) but is not yet in use. There are also resource criteria, such as cost or staffing implications; political criteria, such as pressure on decisionmakers to act; and social criteria, such as the importance of an issue in the community (e.g. substance abuse). The chosen criteria generate, as a prelude to the selection of a strategy, a set of questions concerning what action is to be taken, by whom, where and in order to achieve what objectives. The overall purpose of the political management of public health is to identify the innovations to be adopted, and then to secure the commitment of all those interests whose involvement is necessary to achieve them. This means trying to build up a shared view of the desired future, a shared ideology, and to identify mutual benefit wherever possible. This requires organization – structures, processes Learning to live with Health Economics IV- 29 and procedures for consultation and negotiation, for networking with and between various participating interests, and for building coalitions of critical support to initiate strategies, implement action on projects and sustain the resulting programmes. Taking effective action requires the identification of all the required resources and where they are available. These resources might include money, human resources (both paid staff and volunteers), materials and buildings, and also less tangible factors such as enthusiasm and access to information. Judgements have to be made about how best to harness and use these resources, including how to combine them. The analysis, building of support and development of strategy must be followed by implementation through coordinated action in the appropriate practical steps. At this critical stage the realities need to be looked at very closely, including the strength of the evidence for the HFA proposals being pursued. How far will they convince those who oppose or doubt the proposal? Will the countervailing forces engineer a compromise solution? If so, is it better to push on, modify the current proposal or delay it for a more propitious occasion? Successful actions have outputs. These could take various forms. For example, there may be political outputs, involving elements such as evidence of broad participation in debate and

decisionmaking, of constructive conflict of ideas, or of political and other mechanisms to release people's creativity. Secondly, there could be activity outputs, such as an increase in activity for an unchanged level of resource input or a sustained level of activity for a reduced level of resource inputs. Thirdly, there could be health outputs or outcomes, such as measurable or observable improvements in health status or reductions in health inequity. These outputs need to be monitored, where necessary sustained and if possible increased. The essentials for the successful political management of public health can be seen clearly: the shared view, the political will to cooperate, the support of participating interests, appropriate mechanisms and structures for identifying and implementing options, and a climate of creativity. While it may not be easy, while it may take time, it can be done. However, it often is not done; and the task tends to be more difficult in a declining economy than in an expanding one. Exercise 3 What do you consider to be the key factors for success in handling the political management of public health? Consider this issue: (i) in relation to a specific recent health policy or practice (or proposal), preferably one which is substantial in its implications and controversial; and (ii) in terms of who gains and who loses from the change – would the political management of the public health issue have benefited from a different distribution of the gains and losses between the various participants? Would the key factors and how they could best be handled be similar in a declining economy compared to a growing one? If not, how would they differ? References 1. Alma-Ata 1978: primary health care (http://www.euro.who.int/AboutWHO/Policy/20010825_2, accessed 8 November 2002). Geneva, World Health Organization, 1978 ("Health for all" Series, No. 1). 2. The Ljubljana Charter on Reforming Health Care. Copenhagen, WHO Regional Office for Europe, 1996 (document EUR/ICP/CARE 9401/CN01). 3. HEALTH21: the health for all policy framework for the WHO European Region. Copenhagen, WHO Regional Office for Europe, 1999 (European Health for All Series, No. 6). 4. HEALTH21: an introduction to the health for all policy framework for the WHO European Region. Copenhagen, WHO Regional Office for Europe, 1998 (European Health for All Series, No. 5). 5. Health in Europe. Copenhagen, WHO Regional Office for Europe, 1997. 6. Health in Europe: executive summary. Copenhagen, WHO Regional Office for Europe, 1998. 7. World health report 2000. Geneva, World Health Organization, 2000. 8. ROBBINS, L. On the nature and significance of economic science. London, 1932. 9. LANGE, O. & TAYLOR, F. On the economic theory of socialism. New York, McGraw-Hill, 1964 (Lange's contribution first published in 1938). 10. LUPTON, T. Management and the social science, 3rd ed. Harmondsworth, Penguin, 1983. 11. LEWIS, I.M. Social anthropology in perspective. Harmondsworth, Penguin, 1976. 12. BEVERIDGE, W. Social insurance and allied services. London, H.M. Stationery Office, 1942. 13. Protocol and guidelines. Countrywide Integrated Noncommunicable Diseases Intervention (CINDI) Programme (1994 revision). Copenhagen, WHO Regional Office for Europe, 1996.

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4.2.3 Health administration and management Chris Selby Smith and John Wyn Owen[6] Key messages • Health management matters and it can make a difference. Managers in health care contribute to the provision of health care and the achievement of health gain, i.e. adding years to life and quality life to years. • Managing for health involves deciding what needs to be done and ensuring that it gets done, through people. • Managers are concerned with both processes and outcomes, where outcomes include quantity and quality. • Good managers provide a support service, which enables resources to be brought together in an efficient, effective, economic and equitable manner. The result is enhanced achievement of the health objectives of their organizations. • People are a particularly important resource in health care; over time, good management enhances the capacity of people, whether providers or users, to contribute to achieving outcomes and to making informed choices. • Outstanding managers are

characterized by their ways of thinking, presenting and behaving. They are aware of the importance of risk management, and they enable value to be added throughout the organization. 6 This module was prepared by Professor Chris Selby Smith from Monash University in Australia (email:chris.selbysmith@buseco.monash.edu.au) and John Wyn Owen, Secretary of the Nuffield Trust, London (e-mail:jwo@nuffieldtrust.org.uk). Learning to live with Health Economics IV- 31 Tutors' notes This module has been written as a guide for those in various managerial positions. It will also be of interest to those in policy development and advisers, as it provides insight into key aspects of successfully implementing change and more effectively managing resources. The module should enable the tutor to promote the importance of clear vision and values, learning from experience, encouraging practitioners to be responsive and influential towards internal and external changes, involving staff in decision-making and encouraging a culture of continuous improvement and development. Although the module is, at first sight, most relevant to managers and health professionals among the four main groups of potential users of these learning materials, particularly in relation to analysis, it is useful for all four groups of users in terms of appreciation and appraisal. It is highly relevant for very senior political and bureaucratic decision-makers and the members of various concerned public groups, not least because of the influence they have, directly and indirectly, on the environments in which managers operate and the incentives (and sanctions) which apply to them. In addition it may be helpful to them in terms of analysis of their own working styles and approaches, their strengths and weaknesses, and the implications both in health and health care and in the many other arenas in which they may be operating (e.g. politicians, senior bureaucrats in non-health agencies, journalists, trade union officials, and prominent citizens who contribute to nongovernmental, religious, charitable and voluntary organizations as well as sit on a hospital board). The three exercises are designed to highlight some important aspects of the module. Exercise 1 focuses on the key factors in the internal and external environments in which managers operate, how managers react to them and how they can influence them in the immediate situation and over the longer term. Exercise 2 focuses on the respective responsibilities and areas of authority and accountability of managers in particular situations; how they do (or could) relate to each other; and the consequences (for processes and outcomes) which arise when the three elements are not closely related. Exercise 3 focuses on the objectives of managerial action at both the macro and the micro levels, how they can be achieved (including the determination of priorities), and how managerial achievements can be measured. The exercises can be used in various ways. For example, they could be used in a written presentation, in oral discussion or debate. Role-play could be useful for some audiences. Specific or hypothetical examples could be used. The managerial environment All managers are affected by the environment in which they work, and health care managers are no exception. Thus, legislators, policy-makers, planners (and wider political, economic and social factors) influence the incentives, both positive and negative, which managers face in performing their functions. The environmental factors can be divided into those within the organization, termed internal environment factors, and those operating from outside the organization, termed external environment factors. Examples of internal factors include the local workers, such as doctors, nurses, other professionals and ancillary or support staff; organizational processes, such as working arrangements or internal budgeting processes; and established practices and expectations. Examples of external factors for an individual health care institution include the national ministry of health or regional health authority, the organized medical profession, the general community, suppliers and trade unions. All the IV - 32 Learning to live with Health Economics environmental factors can

be relevant, in greater or lesser degree, to the decisions made by health care managers. In some cases they constrain managerial action; in others they can provide opportunities. The environment in which health care managers operate has some special features. For example, outcomes can be difficult to quantify and aggregate, in contrast to the clearer bottom line of many private sector organizations. This is partly because in most European countries public provision is important. When nongovernmental provision occurs it is often non-profit, religious or charitable in orientation rather than privately-owned and profit-focused, and the providers have particular relationships of trust and responsibility to patients. In many cases users of health care services are vulnerable groups or individuals, who are often particularly vulnerable when interacting with the health care system (e.g. they are sick, homeless, stressed or relatively ill informed compared to providers). Health care managers operate in an environment with significant: • political elements, for example media interest in low birth weight infants • bureaucratic elements, such as high levels of public funding and provision • professional elements, which are especially significant among doctors, and • community elements, such as local relationships and expectations. Since the health sector is large and varied there are significant differences in the managerial environments facing particular health care managers, for example, the public or private sectors, or managers of care for the elderly compared to those in university hospitals or general practice. In general, the health care sector tends to be a demanding environment for managers. Furthermore, in many European countries significant changes are taking place in the environment within which health care managers are operating. These changes vary between jurisdictions, as does the speed with which they are occurring. Examples include: • the relative weight attaching to the preferences of the users of health services compared to the preferences of providers; • the balance between public and private provision (and financing) of health care; • the balance between prevention, cure, rehabilitation and care; • the relative priority attaching to quality and quantity; • increasing recognition of the importance of intersectoral aspects of managing for health; • the extent to which managerial decision-making is devolved, democratized and influenced by evidence. Exercise 1 Identify the key environmental factors affecting your managerial decisions. Distinguish between the internal and external environmental factors. To what extent are you able to influence them: in the short run and in the longer term? The levels and stages of managerial decision-making Managing for health requires decision-making at various levels. First, at the level of national policymaking, managers seek to establish appropriate parameters for decision-making by practitioners to manage intersectoral relations and to obtain sufficient resources. In federal systems the relationships Learning to live with Health Economics IV- 33 between national and
5 regional or provincial authorities are important; in unitary states these relationships occur but may be less visible. Political and bureaucratic considerations are both involved, since policy and politics are not separate from management and administration, but interrelated with them. Policymaking can have distinct stages: identification of problems and setting an agenda; formulation of a policy; adoption of the policy; implementation of the policy; monitoring of the budget and policy evaluation. In practice, these stages are often less separate and linear, e.g. implementation problems may result in a change of policy. Secondly, there is managerial decision-making at the level of individual health care institutions, such as a university teaching hospital, a nursing home chain or a private health care organization. Managerial decision-making at this level can have parallels with management in other organizations, taking account of the specific features of the health care environment. The culture of health care managers at this level tends to differ significantly from the culture of the civil service. In decentralized health care systems or where command and control systems permit some local discretion, managers typically are required to develop

and implement appropriate policies rather than merely adopt central directives. Managerial decision-making involves consideration of both top-down and bottom-up approaches. Thirdly, there is professional decision-making, such as that by doctors, nurses, pharmacists, dentists, therapists or other health care professionals. The relationship between providers and patients in health care implies that decisions made by both users and providers affect health care processes and outcomes. In Module 4.2.1. on policy analysis, bargaining and negotiation, John Lavis identified three levels of health policy which he termed the clinical, administrative and legislative levels. Managerial decision-making as discussed here refers primarily to decision-making at the administrative level, and at the clinical level when health care providers are making administrative decisions. The health care manager is frequently faced with developing decisions and initiating action which take account of various disciplinary approaches. The accountant's view may not correspond with that of the economist, the medical practitioner's with that of the ethicist. The perspective of the professional provider may not equate to those of either the funder or the patient. The manager is charged with reaching a fair and reasonable decision, taking account of relevant factors and perspectives, and acting accordingly. Managers are not only charged with making decisions themselves, but with creating climates and providing incentives which encourage appropriate decision-making by others, primarily in their own organizations but also in the wider health care system. Responsibility, authority and accountability are not always closely related to each other for an individual manager. Where this is the case the three elements should be brought into a closer relationship with each other. No one should be able to avoid blame for those matters for which they are in fact responsible: for example, where a surgeon who takes inadequate care kills a patient who would have recovered to live a satisfactory life if they had been treated competently. On the other hand, no one should be required to accept blame for matters which are beyond their control. Exercise 2 In your managerial environment: 1. Are responsibilities (what you are expected to do), authority (what you have the power to do) and accountability (what you are expected to have done) closely related or not? IV - 34 Learning to live with Health Economics 2. If responsibility, authority and accountability are not closely related for individual managers in your environment: (i) To what extent does this result from factors internal or external to the organization? (ii) What consequences are there for health care processes and outcomes? (iii) In what ways could responsibility, authority and accountability be brought into a closer relationship with each other? Objectives Managers take decisions to achieve results. It is crucial that the objectives to be achieved are clearly defined, however difficult they may be to achieve completely and irrespective of whether tactical adjustments are required from time to time. Countries vary in the balance of objectives they seek to achieve. For example, the United States is more tolerant of inequality in health care outcomes than the United Kingdom, while private provision is more highly regarded in some European countries than in others where social solidarity has greater societal acceptance. Managers who are taking decisions at the level of individual health care institutions also vary in their balance of objectives: for example, prevention through screening, cure through surgery or care through long-term community support of patients and their families. But managers always need to be clear about the objectives they are seeking, otherwise there is no chance of achieving them. It needs to be recognized, of course, that health outcomes are derived from more than solely the health care sector or the administrative responsibilities of the health ministry. They can be significantly affected by factors such as improved road engineering, seat belt legislation or random breath-testing of drivers for alcohol; or whether a person is in employment, and average levels of income and their distribution; or housing and superannuation. Each health service and

manager can benefit from thinking carefully about what they are trying to achieve and the alternatives available for doing so. A quality health service has three hallmarks. First, a commitment to health gain, whereby years are added to life and quality life is added to years. Second, there is a commitment to people and a conscious attempt to provide people-centred services. This applies both to those who work in the health sector and to those for whom the services are provided. Third, there is a commitment to the effective use of resources, including financial resources, human resources and the intellectual resources of the health workforce. The four “E’s” of efficiency, effectiveness, economy and equity provide a guide for managers to think about their objectives in the immediate future and in the longer term. The objectives of health care managers include both outcomes and processes, such as the dignity and respect with which patients and their families are treated. However, it is difficult to measure the extent to which such changes occur, and the extent to which managerial decision-making contributes to them. While economists are accustomed to thinking of maximizing outcomes, subject to given constraints, managers often find that their task is to give satisfaction. They bargain, negotiate and compromise where it is unavoidable. At worst, decision-making is delayed, tough decisions are avoided and responsibilities are blurred. At best, managers achieve the most beneficial result they can at the time, often in a number of different dimensions simultaneously. They adjust when they have to the realities of the moment, but are ready to achieve further gains when the opportunity arises in the future. The process is continuous, so that what is gained today can be lost tomorrow. There can be difficulty in satisfactorily conceptualizing the objectives of the organization compared to the varying objectives of groups and individuals within it: for example, see Lindblom on “still muddling, not yet Learning to live with Health Economics IV- 35 through” (1). An important managerial objective is to create conditions where one set of improvements facilitates others in a cumulative process. Systems can be significant, but people, incentives and motivations tend to be particularly important. Combining resources Few health outputs can be achieved through the use of one input alone. In the typical situation a variety of resources have to be combined, organized or managed. For example, a medical practitioner, a secretary/receptionist, facilities, equipment and information may be combined to produce a general practitioner service; while a range of medical specialties, such as surgery, anaesthetics and diagnostic services, plus nursing and administrative staff, a specialized theatre, equipment, consumables and information contribute to the carrying out of a successful surgical operation. Managers at all levels of decision-making combine and organize resources to ensure that efficiency, economy, effectiveness and equity are achieved. Sometimes managers are able to use the resources of others to achieve their own

purposes: Keeling calls this diplomacy (2). This applies to health care outcomes and the processes by which they are attained. Managers are responsible for organizing the production function of health care, i.e. the processes by which inputs produce valued outputs. Management in the health care sector can involve the combination and organization of a wide range of resources. · In terms of expenditure, labour tends to be the largest single input: two thirds to three quarters of total health care expenditure in many advanced countries. Indeed, this may be an underestimate, given the substantial contribution often provided by contributed service (from family members, religious orders and voluntary or charitable contributions). Labour is critical for the processes of health care as well as its outcomes. The labour inputs are very varied. They can include doctors, nurses and other health professionals; administrative, clerical and support services, such as engineering and maintenance, catering, cleaning and security services; and paraprofessional services, such as those provided by ambulance workers, paramedics and laboratory technicians. · Other important resources include finance, information and the technology of health care. Managers also

need to be aware of the legal framework and the administrative structures within which they operate, because these both constrain action and provide opportunities. · Since the relevant relationships are dynamic, health care managers need an openness to developing perspectives and new knowledge as well as basic skills, training and experience in management. Theory, practice and their integration are all important, while continuing learning is essential in a field of practice characterized by rapid change. Those who are managing for health primarily work through people. In the short term they need to be aware of what resources are available and how best to use them to achieve objectives. But in the longer term good managers seek to expand the resources that are available through demonstrating achievement, investing in institutional and infrastructure resources, and arguing strongly in the fora where resource allocation is determined. Investments can involve additional or improved resources, such as labour, buildings, equipment or information, from which an enhanced flow of services can be derived. It may also be possible for managers to get more outputs from existing resources, including through: • an organizational culture that encourages learning and increased productivity; IV - 36 Learning to live with Health Economics • incentives that link personal rewards and recognition to their contribution to organizational goals; and • transparent decision-making which more closely relates responsibility, authority and accountability. It is surprising how much, even in large organizations, the personal qualities, vision and drive of senior managers can influence the health care outcomes that are achieved; and how competent and motivated teams in well managed environments can achieve results that are beyond even the ablest and most dedicated individuals. Managers at all levels of decision-making also have a responsibility to acknowledge limits. Workers have lives beyond work, and sometimes the human resources are inadequate to achieve the desired results, however competent, committed and well managed they are. It is a managerial responsibility to ensure that health workers are not held accountable for failing to achieve impossible targets, while ensuring that resources are so managed that the absolute maximum of health care outcomes which are possible are achieved. Many OECD7 countries are examining the financing and organization of their health care systems. Wales is presented here as a case study where significant progress was made within a strategic framework aimed to raise the level of health of the population to among the best in Europe. This strategic framework focused on health gain, people, and a resource-effective health service informed by a focused research and development framework. Case study: experience from Wales Aligning health agendas and improving the operational performance of health systems is an increasing priority in a number of countries. There are at present limited examples which can serve as case studies of integrating public health and health services management, but the Strategic Intent and Direction in Wales was “a pioneering response to the WHO Strategy for Health for All by 2000 and therefore lacked models to follow ...” (3). The National Audit Office report considered “The initiative had had a more substantial effect on the way in which the NHS in Wales plans service developments.” (3) Reforms to the British health system in the 1990s fundamentally changed the management and organizational landscape. Although the guiding principles for the National Health Service (NHS) are common to all parts of the United Kingdom, considerable autonomy is given to the Service in England, Scotland, Wales and Northern Ireland. Recent changes in the United Kingdom constitution establishing a Scottish Parliament and Assemblies in Wales and Northern Ireland have consolidated this trend – politicizing what was previously administrative space (4). Wales developed a health strategy of its own, as did Scotland and Northern Ireland. The Strategic Intent has proved to be robust and, although it was introduced by the Conservative administration, was re-emphasized as a policy by the following Labour administration in Wales (5).

Although they differed in detail, the strategies adopted by England, Scotland, Wales and Northern Ireland had important similarities. First, they emphasized the need to tackle the major public health challenges, including cardiovascular diseases and the cancers, as well as give a higher priority to health promotion and sickness prevention. They all highlighted the need for intersectoral action and the development of healthy alliances, including with key players in both the private and public sectors, 7 Organisation for Economic Co-operation and Development. Learning to live with Health Economics IV- 37 whether in education, industry, transport, the environment or housing. Partnership with higher education was seen as one of the main agents for change and prosperity. Intersectoral collaboration was facilitated by the Welsh Office, of which NHS Wales is part – a one-stop-shop in government policy. The portfolio ranges from agriculture, industry and employment, through roads and transport, housing and the environment, education and the arts as well as health and personal social services. It was tailor-made for promoting the broader health agenda. Second, the four strategies reflected the conviction that citizens should be placed at centre stage in health planning and service delivery. Finally, there was a determination to secure better value for money from the substantial resources invested in health care systems. This was particularly important in Wales, which, with a population of some 3 million and about 70 000 people engaged in the health service, has the second lowest GDP per head in the United Kingdom. Three aspects of the Welsh experience are emphasized. Firstly, a striking feature of the Welsh approach was its emphasis on looking for best practice wherever that might be found, and learning lessons for the development and implementation of policy. For example, Wales is one of the so-called "motor" regions of Europe, where the motor industry represents a key part of the economy, and Wales was a founder member of the WHO Regions for Health network. The Welsh strategy also sought to learn systematically from its experiences about how to improve future performance. Secondly, the Welsh approach incorporated a strategic management approach. This meant being clear about who did what, by when, and then evaluating performance remorselessly. There are four key factors to the success of this approach: defining the purpose of the service; sharing the vision and securing ownership; translating policy into effective management and clinical action; and monitoring progress carefully. The Welsh vision was for the NHS, working in partnership, to take the people of Wales into the twenty-first century with a level of health on course to compare with the best in Europe. The idea was introduced, a novel one at the time, that improving health is one of the goals a health care system should strive for. This initiative covered ten areas where health could be improved (recently updated), which together accounted for 80% of total health service expenditure in Wales. Three strands ran through each of the ten health 5 gain areas: • health gain, focusing on improving health by shifting resources to make treatment effective; • making services more responsive to people's needs and preferences by considering the total effect of services on people's lives rather than the narrower clinical perspective; and • effective use of resources by providing an appropriate balance between prevention, promotion, diagnosis, assessment, treatment, care and rehabilitation. Thirdly, although the Welsh Office had a key role to play in offering leadership, the real action took place locally. These were the health plans which proposed specific management actions to achieve the milestones set in the local strategies. Frameworks were to be developed in collaboration with managers, professionals and staff across the system. Pursuing a leadership role while at the same time promoting further devolution of responsibility proved to be a difficult balance to strike. The Welsh strategy recognized the need to engage more fully than in the past the people involved in the management and delivery of services in setting and achieving Welsh health goals. It proved to be essential that local plans for health were understood and accepted by those involved, if they were to be effectively

delivered and health gains achieved. The Welsh approach was not without its difficulties (6). There were overspending and problems with the financing of health services in some counties. Progress was slow IV - 38 Learning to live with Health Economics in implementing the Hine Report for cancer services (7). There were tensions between policy and management in the Welsh Office, cultural differences between the civil service and the NHS, and differences as to how best to treat mental illness – whether to consider it a social care issue or a health matter. But overall it was a period of development and a way of taking public health and the health services forward. This was a period when the concept of health gain became the currency of the World Bank, and the model not only influenced developments in Australia and New Zealand but also served as a case study which informed in due course the development of the Ljubljana Charter (8). Exercise 3 (a) Identify what objectives the health care manager is trying to achieve, at the macro level, and what strategies might assist in achieving them. (b) At the micro level, what factors would you consider: · in determining managerial actions to achieve a specific objective; and · in determining priorities between alternative health care outcomes? (c) How would you know if you had achieved your objectives? Ways of thinking Outstanding managers, at all levels of decision-making, are characterized by their ways of thinking, presenting problems and behaving. Firstly, while they are aware of the complexities of the managerial environment they are not paralysed by analysis. They are oriented to action and to taking the best decisions possible in the prevailing circumstances. They are clear about their objectives but willing to be flexible about how to achieve them. As circumstances alter their tactics may change too. While they take decisions in the present, their orientation is to the achievement of medium- or longer-term objectives. They recognize that their major effect on outcomes is likely to be mediated through other people; and they seek to create the conditions in which others are able and willing to give of their best. They appreciate that producing health care outcomes is a complex business; that many individuals, disciplines, occupations and perspectives can contribute something; and that the manager is the conductor who enables the orchestra to deliver on its full potential. Secondly, the manager's role necessarily involves balancing a range of risks; deciding on the course of action that appears to be most appropriate in the light of the available information; and ensuring that it is pursued in a businesslike fashion. Thus, presenting alternatives, encouraging others (and when necessary disciplining them) and sustaining action once decisions have been taken are all essential elements of the managerial role. For effective outcomes to be achieved, the manager needs the support of the contributing resources, just as they need the manager's support if they are to contribute fully. Furthermore, all managers make mistakes. Some decisions prove to be incorrect, while other decisions are not taken that should have been. This is inevitable. The only manager who never makes a mistake is the one who never takes a decision, so that risk management is inherent in the role. It is often argued that the managerial role has become more difficult as a result of, for example, increasing change, declining direct authority and multiple accountabilities. What some see as a problem others perceive as an opportunity. Thirdly, the managerial role is demonstrated in practice. How the manager acts tends to be more powerful than what the manager says. Much of the manager's influence occurs through creating the Learning to live with Health Economics IV- 39 climate, in leadership rather than mere administration. A manager who is not apparently open to new ideas or alternative suggestions for improving health care outcomes is not likely to elicit the full contribution potentially available from colleagues. Improving health care processes and outcomes often rests on an open and collaborative search, a willingness to consider new evidence or alternative approaches. For example, a managerial orientation towards providers rather than patients is likely to be

reflected quickly in organizational operations and priorities. Managers need to be aware of the dynamic elements of their task and of the intersectoral contributions to health outcomes, and that they have responsibilities to the wider health care system and society as well as to their own institutions. As WHO has argued, “It is very clear that health does not arise from actions pursued solely by the health sector: rather it is a manifestation of all public policies and how they individually or in interaction with each other, promote or damage health” (9). While networking can develop two-way flows of information, skills and attitudes which improve decision-making, it is increasingly being recognized how much knowledge is already tacit and embodied in individuals. References 1. LINDBLOM, C.E. Still muddling, not yet through. Public administration review, 39(6): 517–526 (1979). 2. KEELING, G. Management in government. London, Allen and Unwin, 1972. 3. NATIONAL AUDIT OFFICE. Improving health in Wales. London, HMSO, 1996 (HC 633 Session 1995–1996). 4. HAZELL, R. & JERVIS, P. Devolution and health. London, The Nuffield Trust, 1998 (The Nuffield Trust Series No. 3). 5. Putting patients first. London, NHS Wales, 1998. 6. WYN OWEN, J. Change the Welsh way: health and the NHS. London, The Nuffield Trust, 2000. 7. A policy framework for commissioning cancer services. Report by the Expert Advisory Group on Cancer to the Chief Medical Officers of England and Wales. London, HMSO, 1995. 8. The Ljubljana Charter on Reforming Health Care. Copenhagen, WHO Regional Office for Europe, 1996 (document EUR/ICP/CARE 9401/CN01). 9. HEALTH21: an introduction to the health for all policy framework for the WHO European Region. Copenhagen, WHO Regional Office for Europe, 1998, p. 104 (European Health for All Series, No. 5). Further reading ROBBINS, S.P. & COULTER, M.K. Management, 6th ed. Englewood Cliffs, NJ, Prentice Hall, 1998. SALTMAN, R.B. & FIGUERAS, J., ED. European health care reform: analysis of current strategies. Copenhagen, WHO Regional Office for Europe, 1997 (ISBN 92 890 1336 2). STEWART, R., ED. Management of health care. Aldershot, Ashgate Dartmouth, 1998 (ISBN 1 85521 934 4). WARNER, M. Re-designing health services. Reducing the zone of delusion. London, The Nuffield Trust. 1997 (ISBN 0900574 97 6).   4.3.1 Development and diffusion of health technology Michael F Drummond and Björn Lindgren, with contributions from Eva Bondar8 Key messages • Technologies for health are the mechanisms through which scarce resources are combined to produce health improvements for the individual and for the population. • Health technologies are not confined to the clinical patient care sector but comprise all health promotion, disease prevention, diagnosis, treatment, rehabilitation and care activities. • New health technologies are developed through publicly funded research at universities and research institutes. There is also privately funded research and development

5 (R&D), for instance, in the pharmaceutical industry. • New health technologies are not developed haphazardly but they are induced by the incentives for developing specific kinds of technology created by government regulation and the financial incentives of the market. • Considerable inefficiencies can occur in how technologies are produced (through R&D) and the ways in which they are used, for example on inappropriate patients, in the wrong settings or by untrained professionals. • New health technologies are diffused gradually, and adoption generally follows an S-shape pattern. • Different factors either inhibit or encourage the development and diffusion of health technologies. These include the payment mechanisms for health professionals and institutions. • Both direct regulation and financial incentives can be used to encourage a more rational diffusion and use of health technologies. Regulation can be linked with economic evaluation. • A number of factors influence the cost–effectiveness of a health technology in a given setting. • Economic models can be used to help decision-makers interpret evidence on a given technology for their own setting. 4.3 Updating inputs 8 This module was prepared by Professor Michael Drummond of

the University of York, United Kingdom (e-mail:chedir@york.ac.uk) and Professor Björn Lindgren of LUCHE, Sweden (e-mail: inger.lindgren@luche.lu.se), with contributions from Dr Eva Bondar of Budapest, Hungary (e-mail: bondar_eva@s16.kibernet.hu). IV - 42 Learning to live with Health Economics Tutors' notes A wide range of groups within the health system would benefit from understanding more about the development and diffusion of health technology. This module may be of particular interest to those involved in designing direct regulation and financial incentives to encourage a more rational diffusion and use of health technologies, including: • health (and health care) policy-makers • pharmaceutical industry policy-makers • civil servants and other governmental technical staff • public health officers • health service managers. The module contains boxes illustrating the issues presented in the text, several questions for discussion within a country-specific context and an exercise designed to help health care decisionmakers wishing to interpret data on the cost–effectiveness of health technologies for their own setting. The exercise builds on material given in Module 5.3.1 (on economic evaluation) and Module 5.4.1 (on modelling). Introduction Health improvement is the primary objective of the health sector (1). Technologies for health are the mechanisms through which scarce resources are combined to produce improvements in health. Health technologies are not confined to the clinical patient care sector but comprise all health promotion, disease prevention, diagnosis, treatment, rehabilitation and care activities. For example, a surgeon's time and skills are combined with those of anaesthetists, nurses and operating assistants, plus operating theatre equipment, in order to produce an appendectomy, which under certain circumstances may be a necessary procedure to maintain health; or physical exercise, low-fat food and abstinence from smoking can reduce the risk of developing coronary heart disease and stroke and may, hence, extend life expectancy and quality. In the short run, existing health technologies determine the maximum possible contribution to population health, given the available resources spent on health. There is ample evidence of inefficiency, however. Inefficiency mean that this potential is not fully realized – resources are wasted and the quality of the health sector is too poor in terms of health improvements achieved. The health of the population could be increased in the short run by increasing the efficiency of the health sector (Module 3.2.2). In the long run, more resources spent on health may yield (marginal) contributions to people's health. There are obvious limits, however, to that approach. Sooner or later, improvements in health will diminish when further resources are added. The only way to increase substantially the possibilities for a long and healthy life is through new knowledge about how scarce resources can be combined in order to produce improvements in health, i.e. through the development and diffusion of new health technologies. Quality development in the health sector in terms of improving the health of the population can be achieved by reducing inefficiencies in the use of existing health technologies, by increasing resources spent on health, and by developing new health technologies (1). Given the critical role played by health technologies in producing population health, it is important that health policy-makers, managers and professionals understand their development and diffusion. Otherwise, there can be considerable Learning to live with Health Economics IV- 43 inefficiency in how new technologies are produced, through research and development, and the ways in which they are used. This module deals with the following two linked themes: (i) The economics of research and development Research and development are essential features of the development of new health technologies. What are their potential inefficiencies? What influences do different approaches to the reimbursement and pricing for health technologies have on R&D? How can those undertaking R&D be given incentives to improve efficiency? How should priorities for R&D be set? (ii) The economics of transfer and diffusion

New health technologies are diffused at different rates in countries. They are adapted and changed, and are spread to other settings and to other groups of patients. What factors encourage the use of particular technologies? What factors inhibit the use of particular technologies? How do health technologies spread from one setting or application to another? What is the influence of different payment systems on health professionals and institutions such as hospitals? How can key actors in health care systems be given incentives to use health technology appropriately? How can decision-makers adapt or interpret economic evidence on a given technology for their own settings? What is the role of economic evidence in designing regulation? (This last issue is explored in Module 5.3.1 on Economic evaluation.) The economics of research and development (R&D) Health technologies comprise all health promotion, disease prevention, diagnosis, treatment, rehabilitation and care activities which may contribute to the health of the population. New knowledge about how health can be promoted through changing individual behaviour may be at least as important as new procedures in clinical patient care in the development of quality in the health sector. In clinical patient care, technologies are not confined to conspicuous items such as electromagnetic resonance technology or other expensive equipment but include “all drugs, devices, procedures, and systems of organization” (2). Some technologies are to a large extent embodied in physical items such as drugs and devices, whereas other technologies, such as systems of organization or surgical procedures, represent knowledge only available in people’s brains and skills. Since the end of the Second World War there has been a rapid change in the technologies available for health. Almost all diagnostic and treatment methods that are used in clinical patient care today were unknown 50, or even 40, years ago. Among prescription drugs, for instance, about 10% of the 200 largest-selling drugs are new each year; and only 25% of the 200 top-selling drugs remain in that group 15 years later. The revolution in the processing of information through the development of new computer hardware and software facilities has included health care. New ways of organizing health care have been introduced in recent years. In addition, there is substantial new knowledge about the effects of healthy lifestyles and about how to modify environments so that people will make healthier choices. New health technologies are developed through publicly-funded research at universities and research institutes. There is also privately-funded R&D, for instance in the pharmaceutical industry, which produce new health technologies. The incentives may differ between private- and publiclyfunded organizations regarding the extent and direction of research and development of new health technologies, but for all agents involved in the development of new health technologies the expected utilization of the new technology is vital. For a private, commercial pharmaceutical company, this is self-evident, but research fellows at universities may also want to see their scientific discoveries developed and used in practice. Few people are interested in developing technologies that no one will use. Thus, new technologies are not developed haphazardly but are induced by the incentives that are available to develop specific kinds of technology. The expected return determines the development. Returns may be both pecuniary and, for people such as university researchers, non-pecuniary (fame, high positions, etc.). Thus, some major characteristics are the same for the research and development of all health technologies, even though there may also be differences. The economics of R&D in the pharmaceutical industry are fairly well documented. Furthermore, the pharmaceutical industry works in a market environment in which the behaviour of both firms and the industry as a whole is governed by financial incentives – the prospect of market revenue to cover the costs of developing the drug, in addition to the costs of producing it. Therefore, we will use pharmaceutical R&D as an example to explore the characteristics of the R&D process and to discuss the factors determining the extent and direction of R&S of new health technologies.

The role of academic research is emphasized in Box 1. Box 1. The role of academic research Academic research plays an essential role in the development of new health technologies. Publiclyor privately-funded university research is often a prerequisite for applied R&D in, for instance, pharmaceutical companies. So, to a large extent, basic research at universities and applied R&D in pharmaceuticals are complementary. It has been shown, however, that there is also some substitution: when basic academic research in a specific area of therapeutics is increased, there is increased private investment both in the same category of R&D and even more in other categories. Since incentives differ, the financial incentives being decisive in private business, the direction of research is also different. The resources allocated to research into the less prevalent and more severe diseases tend to be greater from public funds than from private industry. This kind of research, however, may not lead to applied R&D, because the financial incentives for industry do not exist (see, for instance, the example discussed in Box 2). Universities (and university hospitals associated with medical education and research) also play an important role for the location and success of private industry. Most production of new scientific knowledge is concentrated in a few regions within a few countries. If knowledge only flowed through published papers, geographic location would be unimportant. The importance of informal personal contacts appears, however, to be crucial. Thus, universities and academic research not only provide industry with highly qualified labour but also with R&D externalities in the form of symposia, conferences, seminars and education. Sources: Jaffe (3), Ward & Dranove (4). R&D of pharmaceuticals The development of a new pharmaceutical product takes time and money. After a potential market has been identified, the pharmaceutical company is involved in the search for new chemical substances. Often thousands of substances are tested before one single substance proves to be potentially useful; this substance is then further improved and superior substances produced as candidate drugs. Various pharmacological tests (e.g. regarding the toxicity of the substances) are carried out using both animals and non-animal cell models. Learning to live with Health Economics IV- 45 When the substance fulfils certain criteria, tests are carried out on human volunteers. This does not start, however, until the company has filed an application to the appropriate regulatory body (in the United States this is the Food and Drug Administration, FDA) and received approval for doing clinical tests. The time from application to approval may take 5–9 years. Clinical studies start with rather small, randomized control trials including only healthy individuals (say 50–100). When the relations between dosage, effects and tolerance have been analysed, large-scale trials on say, 500–5000 patients are performed. Different dosages are compared with placebo and conventional therapy. The evidence on efficacy and adverse reactions, interaction with other drugs, etc., including during long-term treatment, is documented. Once the safety and efficacy of a drug have been established, an application is filed with the appropriate regulatory body in order to register the new pharmaceutical product. After approval, a process which may take 1–3 years, the company can finally market its new pharmaceutical product. According to estimates, it takes on average 12 years and US $360 million to discover and develop a new pharmaceutical product before it is introduced on to the market. This is essentially the cost of producing new knowledge about how scarce health care resources can be used. If competitors were able to use this new knowledge without paying in order to produce their own pills, these “free riders” could easily set prices on their products far below what would be necessary for the inventing company in order to recoup its R&D costs. Obviously, there would be too little R&D in private pharmaceutical companies if the market was not regulated. The main measure used here by governments is guaranteeing a temporary monopoly through patent legislation. (Patents actually have a rather long history: the first

patent law seems to have been adopted by the Republic of Venice as early as in 1474.) The inventor’s property rights on pharmaceutical products, processes and uses are protected for 20 years under the World Trade Organization’s Agreement on Trade-Related Aspects of Intellectual Property Rights. There does not (yet) exist a Europe-wide patent, but after a single application the patentee receives a bundle of national patents. The patent-holder can either make sole use of the discovery or license others to use the invention at an agreed royalty rate. In order to protect its commercial interests from competitors, a pharmaceutical company normally applies for patents as early as possible during the development process. This means that a new pharmaceutical product will have less than 20 years (maybe only 10 years) left of patent protection when it finally reaches the market. The expected revenue during the remaining period of the patent time is vital for the company’s decisions to develop and market the new pharmaceutical product. Society uses patents as an incentive to the inventor to develop appropriate technology and to make it available and accessible at reasonable cost. The impact of regulation Expected revenue depends both on expected prices and expected volumes sold in the pharmaceutical market, both of which are influenced by government regulation. Prices are more or less regulated in all European countries, especially if pharmaceuticals are to be reimbursed by (social) insurance. Reimbursement may also be a prerequisite for large volumes; estimated price elasticities are very low for prescribed drugs, for which patients only pay a minor share. Volumes are also affected by the size of the target group of patients and the medical decision behaviour of physicians. The size of the target group of patients can be influenced by decisions taken by regulatory bodies. Commercial marketing as well as recommendations by therapeutic drug committees may influence physicians’ behaviour. The way physicians prescribe drugs may also be affected by direct financial incentives, created by how doctors are paid under the system. Thus, there are several ways for governments to affect the behaviour of pharmaceutical companies by influencing either the cost of developing new drugs or the expected revenue when the new drug has entered the market. The regulation of the pharmaceutical market in particular and health care systems in general creates the environment in which a company makes strategic decisions. For instance, in some countries, governments require or request economic evaluations to show “reasonable” cost– effectiveness or cost–utility ratios for a new drug to be reimbursed. If the cost (price) of the new drug is too high in relation to its effects in terms of health consequences, then it will not be reimbursed. Thus pharmaceutical companies have an incentive to make their own economic evaluations of potential new drugs as early as possible in the R&D process. It would be of no use to a company to develop a new wonder drug if it could not recoup its R&D costs. However, from the start there is great uncertainty over the characteristics of a product, and hence over future returns. Nevertheless, a company may still want to make at least rough calculations of the potential cost–effectiveness of its new drug as part of deciding whether or not to continue the process. At several other points, the company will make decisions whether to continue, contract or expand. Even though such decisions naturally depend on potential therapeutic benefits, and the expected frequency and severity of adverse reactions, they also depend on estimated future revenues and hence on the estimated results of economic evaluations. As more information is produced during the development process, the economic evaluations become more and more reliable as a tool for decisionmaking within the company. Can an optimal level and direction of R&D in health technologies be achieved? Obviously, the development of health technologies is influenced by government regulation. Thus, at least in principle, regulators would be able to create incentives for innovators to develop an optimal level and direction of R&D in health technologies in a societal perspective. Since R&D in health technologies takes time and money, it is

an investment with expected benefits in the future after many years of costs only. The resources used for R&D in health technologies could be used for immediate purposes or for other kinds of investment. The optimal level and direction of R&D in health technologies from a societal point of view is achieved when there is no better way of using scarce resources, taking into account both present and future demands of a population. In principle, no new health technology for which the willingness to pay is not great enough should be developed. By the same token, all new health technologies for which the willingness to pay is great enough should be developed. Willingness to pay represents other present and future consumption opportunities foregone by using resources for R&D in health technologies. To what extent do present health care systems create incentives for the optimal development of health technologies? Technologies for health are developed for the world market, and hence for the leading markets in the world, notably the United States market, with other characteristics in terms of demography, incomes, preferences, etc. than, for instance, small countries such as Belgium and Sweden. Even though the regulation of health insurance in all countries may matter, the United States health care system has probably the greatest impact on R&D in health technologies. Learning to live with Health Economics IV- 47 Box 2. Too little R&D on vaccines? The lack of incentives due to market failures is a reason why socially valuable health technologies may not be developed. Vaccines, for instance, have proved to be effective against several infectious diseases – the success of the smallpox vaccination programme, which has led to the eradication of the disease, is perhaps the best example of the potential of vaccines. There are fears now, however, that there is too little R&D today in order to produce new vaccines, especially against communicable diseases which are common in poor countries. R&D on vaccines is a global public good. Efforts in one country to develop a new and more effective vaccine against tuberculosis will benefit many other countries too. Once a vaccine has been developed and R&D have been sunk into it, however, governments may be tempted to use their powers as regulators and major purchasers not to compensate the developer for his expenditure on R&D but only for the manufacturing costs. Thus potential developers will not invest in R&D without credible commitments that they will be paid, but on the other hand no single small country has an incentive to pay. Traditionally, governments have financed both the basic research on vaccines and the later stages of development through grants to researchers, hence paying in advance of the development of the vaccine. The growth of the biotech industry and the increased availability of risk capital, however, has made it possible for researchers to get investors to finance R&D as long as a big enough market can be expected. So for the later, more applied stages of the development of a new vaccine, commitments in advance to pay (only) if a vaccine is actually developed have important advantages. It gives the researchers, pharmaceutical companies and investors strong incentives to focus on projects which have reasonable chances to yield a viable vaccine. Mr James Wolfensohn, President of the World Bank, has made a proposal along these lines. He has suggested that the Bank should create a US $1 billion vaccine purchase fund to help poor countries purchase specified vaccines if and when they are developed. The proposal has several advantages in comparison with alternative ways of rewarding the developers of vaccines. Extending patents on other pharmaceuticals would place the entire burden of financing R&D on vaccines on the people who need these other pharmaceuticals. Increasing the prices of already existing vaccines may not create sufficient incentives for new research. Source: Kremer (5). Major progress has now been made by establishing the Global Fund to Fight AIDS, Tuberculosis and Malaria, and creating the Global Alliance for Vaccines and Immunization. As emphasized above, there will be too little technological progress in a completely unregulated market. Such worries

are solved, at least in principle, by granting patents. It has been suggested, however, that the regulation and design of health insurance may induce the development of new technologies for which unsubsidized consumers would not be willing to pay, hence creating a welfare loss to society. This would be the case if all other regulatory measures were designed in order to induce the optimal investment in new technology in an unsubsidized market. If, for instance, patent protection falls short of being optimal in that sense, there is not necessarily any welfare loss from a too rapid rate of innovation induced by insurance. Some new technologies increase the expected health care cost for a specific patient, while others decrease it. The biologist Lewis Thomas (6) distinguishes three levels of health technology: (i) “nontechnology” means that the disease is poorly understood; it involves reassuring and nursing patients with very little hope of recovery, for example the treatment of patients with intractable cancer; (ii) “half-way technology” adjusts to disease and postpones death, for example organ transplantations and the surgical treatment of cancer; (iii) “high technology” comes as a result of a genuine understanding of disease mechanisms, for example vaccines and antibiotics for bacterial infections. Generally, halfway technologies are more expensive than non-technologies and high technologies. IV - 48 Learning to live with Health Economics As explained in Module 5.3.1, the aim is cost-effective technology. Although the therapeutic value of new technology is becoming an important policy issue, policy-makers are still predominantly concerned with cost and expenditure. It seems to be common wisdom among health economists that most new technologies have increased rather than decreased expenditure. Thus, there seem to have been relatively more development of half-way technologies than high technologies. The reasons may be found in the cost-reimbursement insurance systems used until recently in the major world markets for health technologies, notably in the United States. In such systems there is little or no incentive for health care providers to avoid costly technologies that are only marginally effective, since the costs are paid retrospectively by insurance. This may have created a non-optimal development of health technologies from a societal perspective, both from the narrower American perspective and from a broader global perspective. In systems with prospective-pricing and cost–effectiveness evaluations, there should be incentives to bypass the development of half-way technologies. Thus, the regulation and design of health insurance will have influence not only the amount of R&D activities but also the direction and type of innovation which will be developed. The economics of transfer and diffusion New health technologies continue to be developed and adapted once the are introduced into the health care system. For example, a new surgical procedure may first be used by highly skilled surgeons working in tertiary referral centres. After a while it may be more widely used as more surgeons hear about it. The spread, or transfer, of health technologies raises two efficiency concerns. First, as the technology spreads it may be used on a wider patient population. An assessment would need to be made, through economic evaluation (see Module 5.3.1), whether a broader range of indications for use could be justified on the grounds of cost–effectiveness. Second, as a technology spreads it will be applied in different settings, where the availability of facilities and the skills of professionals and systems of organizing health care are different. It is therefore not clear whether the cost–effectiveness of the technology as applied in the new setting is the same as in the original one. Also, issues related to technology transfer may differ by type of technology. For example, the training requirements associated with acquiring a new surgical technology may be different from those needed to prescribe a new drug. This part of the module deals with the second of these two efficiency concerns, which is particularly important in an international context. Namely, is a given technology, when transferred to a new setting, as cost-effective as in its original setting? Factors affecting the cost–effectiveness of health technologies Basic demography and

epidemiology of disease Countries differ in respect of the age structure of their populations and the incidence of various diseases. In some cases this will affect the cost–effectiveness of health care technologies and programmes, Learning to live with Health Economics IV- 49 Box 3. Cost–effectiveness of new health technologies A new health technology is never automatically and simultaneously adopted by all who could use it or benefit from its use. Diffusion takes time and generally follows an S-shaped pattern (Fig. 1). The vertical axis measures the percentage of potential providers who have adopted the technology, while the horizontal axis measures the passage of time. Thus, adoption normally begins slowly but quickens. At some point, the percentage continues to increase but at a decreasing rate. The share of providers asymptotically approaches 100% by the passage of time. Why do some providers adopt a new technology more or less immediately it is available, while others wait? One explanation is that it is seldom totally obvious whether early adoption or waiting is the best strategy, since the costs and benefits of using a new technology in practice could never be known with complete certainty in advance. Thus, while waiting means that individuals cannot benefit from the new technology (which represents a welfare loss to them), early adoption can be risky in that some serious adverse effect (undetected in clinical trials) may occur. So, there are two types of error that a provider can make: to introduce a new technology too early or too late. The degree of risk aversion may thus be one explanatory factor. Other factors determining the rate of adoption may be whether or not the new technology (i) requires a greater investment, (ii) has an impact on the organizational setting, (iii) requires a change in the skills of the provider's staff, or (iv) implies a shift of expenditure from the public budget to the patient's pocket or from the private to the public sector. Not all new health technologies follow exactly the same S-shaped pattern. Some technologies are diffused more quickly than others. Often the diffusion process is interrupted before all the potential adopters are reached. Still newer technologies may be introduced that will compete with the recently introduced one. Thus, an increase in the percentage of adopters will sooner or later be followed by a decline. Some technologies will survive, however, while others will leave the market completely. Fig. 1. The diffusion of a new health technology

particularly those delivered on a population basis. For example, immunization or screening programmes and for the treatment of disease are likely to be more cost-effective in populations where the incidence of the disease in question is high. Differences in age structures between countries are likely to lead to different levels of incidence in various countries and hence the size of the overall economic burden. The cost–effectiveness of treatment is also likely to vary by patients' characteristics, including age, lifestyle and medical history. Therefore, when discussing the cost–effectiveness of health care treatments and programmes, it is important to specify the patient population to which any statements apply. Availability of health care resources and variations in clinical practice Countries differ in respect of the range of treatments and health care facilities available to their populations. In the case of treatment for ulcer, the availability of surgery could vary from place to place. In some countries with national health care systems, such as Sweden and the United Kingdom, there is rationing with waiting lists for hospital admission. The availability of important diagnostic facilities, such as endoscopy, could also vary from one location to another. In turn, the availability of resources may affect the way medicine is practised. For example, if there are long waiting times for endoscopy, a clinician may try a therapeutic dose of a drug for a patient experiencing ulcer-type pain without waiting to confirm the diagnosis. Another difference between countries, more directly related to drug therapy, is the range of licensed products and availability of generics. Although clinical practice is partly constrained by the available alternatives, it is known that practice varies among clinicians in the same geographical area facing essentially the same range of treatment options (7). To the extent that clinical practice varies systematically between countries, this is likely to affect the relative cost–effectiveness of health technologies. Once developed, new health technologies will be diffused. They can be spread across countries, to new health care settings and to new patient groups. Thus, the application of a new technology may initially be implicitly (or explicitly) restricted to individuals within a specific age span, which may gradually be extended to older (and/or younger) patients. The rationale for restricting the access to new health technologies is often resource constraints in combination with limited or uncertain health gains to individuals above or below a particular age. One explanation why access to new health technologies is usually extended to older (and younger) patients is the fact that health care resources have increased over time. Another is the gradual improvement of technologies that increase the expected health gains from treatment. Diffusion across ages of an existing technology can have a substantial impact on per capita health care expenditure among the oldest people. Uraemia is a disease which may affect only a small proportion of the population but still represents a significant share of health care costs. The two preferred treatments are kidney transplantation and/or dialysis. Dialysis is the process of removing blood from a patient, purifying and returning it to the patient's bloodstream. Even though the technology of kidney transplantation is fully known, the availability of this alternative is strictly constrained by the supply of organ donors; in some countries there is a waiting time of 2–3 years and greater use of dialysis than is desirable. In Sweden, for instance, dialysis became common in the early 1960s and the first kidney transplantation was performed in 1964. Fig. 2 shows clearly how the use of dialysis was diffused among older age groups in Sweden between 1982 and 1994 (together with an increase in the total number of new patients taking up dialysis each year). The age structure for kidney transplantations, however, was more or less constant during the same time-period. Here, diffusion was obviously prohibited by the limited access to organ transplants; the total number of transplantations per year were roughly the same. Source: Nystedt (8). Box 4. The diffusion of health technologies to older age groups Learning to live

with Health Economics IV- 51 Incentives to health care professionals and institutions In some health care systems the level of remuneration of health care professionals and institutions is largely independent of the level of service delivered. For example, hospitals are given a global budget and physicians are paid by salary. In other systems physicians are paid by fee per item of service and hospitals are reimbursed by the number of cases in each category treated. It has often been suggested that physicians operating under a fee-for-service system are more likely to generate extra demand for their services, whereas those paid by salary or capitation are more likely to deter demand. This may affect the number of visits to a physician by and diagnostic tests carried out for a patient suffering from (say) ulcer-type pain. In the case of hospital treatment for ulcer, the method of reimbursement could affect which services are delivered on an outpatient basis and the length of stay for inpatients. A hospital being paid a fixed amount for treating a given case has more incentives to free the bed for the next patient than a hospital being funded through a global budget. Relative prices or costs It is well known that absolute price levels vary between countries. However, from the point of view of cost–effectiveness assessments, the critical issue is whether the relative prices of health care resources differ. Most obviously, if the relative prices of the main drugs for a given condition differ between countries, then their relative cost–effectiveness will differ. Perhaps less obvious is the fact that the relative cost–effectiveness of drugs will differ if the relative prices of other health care resources differs between countries. For example, a drug with greater efficacy, a better side-effect profile, or a more convenient route of administration, will appear to be better value for money in a country where the costs of investigations, hospitalizations, surgery and visits to the physician are relatively higher, since consumption of these items is likely to be reduced. For example, Hull et al. (9) found that the relative price of venography (a diagnostic test for deep-vein thrombosis – DVT) differed between the United States and Canada. This affected the relative Fig. 2. Mean age of new patients on dialysis in Sweden, 1982–1994 Year IV - 52

Learning to live with Health Economics cost–effectiveness of alternative diagnostic strategies for DVT in the two countries and would also affect the estimates of the value for money of drugs to prevent DVT. Ways of adapting economic evaluation results An analyst seeking to adapt the results of economic evaluation from one setting to another could be faced with one of three situations. First, only clinical data may have been collected in the clinical trials and there might be a need to produce economic evaluations for more than one country or setting. The only option in this case would be to undertake a modelling study, where the clinical data are combined with cost (and possibly quality of life) data from a number of sources (e.g. routinely available statistics or free-standing 5 cost studies). Second, economic data (e.g. quantities of resource use) may have been collected alongside a clinical trial undertaken in one country, but economic evaluations be required for other settings. In this situation a modelling study using only the clinical data could be undertaken, as above. Alternatively, the resource use data could be adapted in some way in order to make them relevant to another setting. Third, economic data may have been collected alongside a multinational clinical trial and economic evaluations be required for all the countries enrolling patients in the trial. Here the analyst has a number of options for using the resource use data. Either they can be pooled, as is common for the clinical data, and priced separately for each country. Alternatively, the resource use data for patients from each country could be analysed separately and then priced for each country as above. In this case the analysts would also have the option of calculating cost–effectiveness ratios for each country using the pooled clinical results or the individual results for each country. Questions for discussion 1. Identify three examples each of (a) non-technologies, (b) half-way technologies and (c) high technologies among the health technologies available in your

country. 2. Name five health technologies that have been introduced in recent years in your country. Where were they developed? 3. Name five health technologies that have disappeared during the last few years and that are no longer in use. 4. Explain why these changes have taken place. Have they been appropriate? To what extent have they been the results of deliberate decisions, including economic evaluations of new versus old technologies? 5. Is there a lack of “high” (and “half-way”) health technologies in your country? In which areas? 6. Why have not “high” (or “half-way”) technologies been introduced to a larger degree? Are they not available in the world market – if so, why? Or has introduction been inhibited by domestic factors? 7. How could incentives be improved to develop “high” (or “half-way”) health technologies in areas where they are missing? 8. Creating incentives for the development of new health technologies may be a different policy from creating incentives for using existing health technologies efficiently. The former is primarily an issue for industrial policy (but with important indirect consequences for the conditions for health policy-making), whereas the latter is primarily an issue for health and health care policy (but with potential repercussions on the conditions for R&D). Discuss whether this is a dilemma Learning to live with Health Economics IV- 53 or not. To what extent would your answer depend on whether your country is small or big and whether there is an industry with significant R&D in health technologies in your country? (Is your country a free-rider in the world market when it comes to the development of new health technologies?) 9. Describe some examples of the diffusion of new health technologies in your country, including different settings and across age groups. 10. Why do some providers adopt before others? Which types of technology would you expect to be adopted most quickly (and which most slowly)? What factors can increase (or decrease) the rate of diffusion? 11. At what stage of the development and diffusion processes should an economic evaluation of the new health technology be made? 12. Give some examples of technologies that have been introduced but later shown no effects on health or even serious adverse reactions. Could such negative events be avoided? How? 13. What has been the impact so far from information technology on the health sector in your country? What potential for its use would you expect in the future? Exercise 1. Using modelling to adapt economic evaluation results from one setting to another This exercise is based on the study by Drummond et al. (10) of misoprostol, a drug for prophylaxis of gastric ulcers in patients on long-term non-steroidal anti-inflammatory drugs experiencing abdominal pain. A clinical trial, undertaken in the United States, had shown that patients given misoprostol (400µg daily) for 3 months had a lower rate of endoscopically determined lesions than those receiving placebo (5.6% versus 21.7%). With a higher dose of 800µg daily the rate of lesions fell to 1.7%. Apart from conferring clinical benefits, a lower rate of gastric lesions is likely to generate economic benefits: if fewer patients have lesions it is likely that fewer will require diagnostic work-up for suspected ulcer and few will require treatment in ambulatory care or in hospital. An economic evaluation can, therefore, assess whether these potential savings in resources justify the costs of adding misoprostol. The influence on cost–effectiveness of setting (e.g. your country versus the United States or the United Kingdom, respectively) can be explored by using the decision tree given in Fig. 3. (See Module 5.4.1 on Modelling for more discussion of decision tree models.) The data required to populate the model for the United States and the United Kingdom are given in Table 1. Variable Value for Value for United States United Kingdom Cost of misoprostol for three months prophylaxis (400µg daily) US $160 $120 Probability of patient complying with prophylaxis 0.6% 0.6% Probability of ulcer (adjusted for silent ulcer) with prophylaxis 0.034% 0.034% Probability of ulcer (adjusted for silent ulcer) without prophylaxis 0.130% 0.130% Probability of patient with ulcer being hospitalized 0.086% 0.053% Probability of hospitalized

patient being given surgery 0.12% 0.43% Cost of ambulatory care for ulcer US $901 US $540 Cost of medical hospital care for ulcer (i.e. no surgery) US $3 450 US $155 Cost of surgical hospital care for ulcer US $15 700 US $2 530 Table 1. Data for the decision-tree model IV - 54 Learning to live with Health Economics Prophylaxis with misoprostol OA patients taking NSAIDs with abdominal pain No prophylaxis No ulcer Ulcer Hospitalized Ambulatory No surgery Surgery No compliance No ulcer Ulcer Ambulatory No surgery Surgery Hospitalized No ulcer Compliance Ambulatory Ulcer Hospitalized Surgery No surgery Outcome 1 2 3 4 1 2 3 4 3 2 1 4 } } Plus ½ course misoprostol Plus full course misoprostol Source: Drummond et al. (1992). Plus ½ course misoprostol half half Osteoarthritis taking Non-steroidal anti-inflammatory drugs with abdominal pain Fig. 3. Using a decision tree to adapt data from setting to setting Source: Drummond, M.F. et al. Issues in the cross-national assessment of health technology (10). (a) Before making the calculation, speculate on whether misoprostol will be more cost-effective in your country than in the United States or the United Kingdom, giving your reasons why. (b) Calculate the expected costs or savings per patient for three months prophylaxis in the two countries. In the decision tree, prophylaxis is compared with no prophylaxis. With no prophylaxis it was assumed that the ulcer rate approximated to that in the placebo group in the clinical trial, although an adjustment was made for the fact that around 40% of lesions discovered endoscopically will be “silent” (i.e. they will not bother the patient) and thus will not require costs in diagnostic work-up or therapy. In the treatment arm the non-compliers were also assigned the trial placebo ulcer rate. The difference in expected cost is driven by the clinical data, but the calculation in both arms requires data that were not gathered in the trial.

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Key messages • Primary health care is a broad concept that covers both a way of organizing health care and a set of beliefs about the best way of improving health. It underpins HEALTH21, the health for all policy framework for the European Region approved by the WHO Regional Committee for Europe in 1998 (1,2). • Primary health care includes care directed at both individuals and communities. There is thus an important public health component that must be taken into account when economic analyses are made. • Primary health care interventions are often diffuse and difficult to evaluate with the empirical quantitative methods frequently used in health economics. • Primary health care resources are mainly provided by informal care by individuals, families or the community. Economic and social analysis needs to recognize and build on this co-production. • Primary health care has much to offer in terms of cost-effective interventions, but there are many factors that prevent these services being given the appropriate priority. • Changing demography and social patterns pose special challenges to primary health care, especially in terms of long-term care and the care of older people. • Strong primary health care both supports and requires healthy communities if it is to be successful. Tutors' notes This module covers the health economic aspects of primary health care. Many of these points have been touched on in earlier modules, and some of these are cross-referenced. The module is best used towards the end of the series, as it is helpful for students to have covered the generic health economic concepts. No specialist knowledge is assumed. 4.4 Specific examples 9 This module was prepared by Dr Chris Buttanshaw, Director of Strategic Development, North Staffordshire Combined Healthcare National Health Service Trust, United Kingdom (e-mail: chris.buttanshaw@nsch-tr.wmids.nhs.uk). IV - 58 Learning to live with Health Economics The module should be of interest to a wide audience including: • policy-makers • clinical staff • managers in health and other public service settings. The exercises are designed to be relevant to participants from different countries and backgrounds. Wherever possible it would be appropriate to tailor these by using local or topical scenarios. Each exercise is intended to be used in small groups. However, it might

help if some of the exercises are worked up in advance by individual students. Introduction The concept of primary health care has been introduced in a number of other modules. This module is an integrated discussion of how the generic principles covered in other modules apply in primary health care. An understanding of this material will help in successfully applying the health for all approach. The nature of primary health care The concept of primary health care has been summarized in the Declaration of Alma-Ata (3) and these values are reflected in HEALTH21: The health for all policy framework for the WHO European Region (1). The concept of primary health care straddles individual practice and public health. It looks not only at the health of individuals but also at the health of communities and populations. There is no simple definition of primary health care, but a good starting point is contained in the Declaration of Alma-Ata: Essential care based on practical, scientifically sound, and socially acceptable methods and technology made universally accessible to individuals and families in the community through their full participation and at a cost that the community and country can afford to maintain at every stage of their development in the spirit of self-reliance and selfdetermination. This is a very broad concept. The term is confused in some parts of Europe with primary medical services (e.g. general practitioners) and other health services, but these are only one component. The list of further reading includes other discussions of this matter. The approach is a holistic one that recognizes that health systems need to understand health care not just in the context of the individual, but also in the context of the family and communities to which that person belongs. Primary health care involves not only the health sector, but other sectors such as education and housing as well. The next section emphasizes that health production is an output from all sectors, and that health planning needs to reflect this. It also reminds us that health is largely a function of factors other than health services. It makes the additional point that the health of local communities is directly affected by their ability to retain discretion and control of local services and facilities across all sectors. Primary health care is often thought of as a term descriptive of organizations, defining them as separate from secondary and tertiary care. However, the primary health care concept should permeate Learning to live with Health Economics IV- 59 all services. For instance, a tertiary cardiac service can increase its primary health care content by carrying out more operations locally, or by ensuring that patients see the same staff at each visit, or by supporting local community rehabilitation programmes. The potential for confusion between primary health care thought of as organizational units, and primary health care as a concept to inform practice across the entire health care sector, is an important barrier to achieving system goals in many settings. Role of informal care In primary health care, the resources for delivering health are
5 predominantly informal. Individuals provide most care for themselves, supported by family, friends or local communities. The role of paid professionals providing formal care is to support and supplement this. This is often referred to as coproduction. At its simplest, a giver of care (e.g. a nurse) and a receiver of care are involved. However, neither party in this simple relationship is purely a giver or a receiver. The “receiver” will normally also be providing part of his or her own care, and the “giver” will be receiving a benefit in terms of his or her own personal role in the community as well as more conventional monetary and other rewards. Broadening this example, individuals, families, friends, communities and carers must be considered as both contributors to and potential beneficiaries from any caring activity. Of course this is true of any aspect of health care, but in primary health care these links within communities are of central importance. An increase in the supply of formal care may either support or replace informal care. Formal care may increase independence and interdependence and thus the health of individuals and communities, or it may generate dependence and poorer health. There is thus a double risk: additional formal resources may add to the

financing burden but simply replace an existing resource; and by increasing dependence, formal services may directly reduce individual and community health. In terms of quality, formal and informal care will frequently differ. For example, informal care tends to be more accessible, often being available 24 hours a day, and there is continuity of care. Informal care and formal care may vary in quality; both may be poor or inadequate. Informal care may cause carers' health to deteriorate under the strains of giving care. It can become a source of abuse. Thus it is not a question of one approach being better than the other, but of the right balance in the local context. There are wide variations in the role of informal care in different systems. These variations are supported by historical, cultural, political and social factors. Co-production is nearly always relevant in decision-making, whether at a policy, allocation or delivery level. However, it is very often neglected. Exercise 1 This exercise is designed to develop participants' understanding both of the limitations of formal analysis of costs and benefits in a realistic situation and the knock-on effects for patients and carers of a change in formal care. The emphasis of the discussion would be different with different participants. Policy-makers could concentrate on how the political, social and cultural climates affected the role of informal care, and the effects on communities as well as individuals. Managers could concentrate on the technical and allocative decision-making process. Clinicians could concentrate on the outcomes for patients and carers of the different approaches, and how the care processes they design would differ to maximize benefits and minimize costs.

IV - 60 Learning to live with Health Economics A health authority is considering changing the nature of rehabilitation for stroke. At present, older people with stroke are admitted to a large hospital for acute care and then for a lengthy period of rehabilitation. In the alternative model, patients would be admitted for a briefer period and then be discharged to their home, where a community-based therapy team would complete the rehabilitation process. (a) Considering the issues raised by co-production, what are the anticipated effects on costs and benefits of the proposed change? Who would bear the changed costs and benefits? (b) How easy would it be to compare the costs and benefits of the alternative approaches? (c) How would the specific social, cultural and political environments in your country affect such a decision? The relevance of the primary health care concept as demography and social background changes Changes in the demography and social norms in the WHO European Region will profoundly affect the delivery of health care. Different work patterns and an ageing population are changing the ability of communities to provide primary health care. These changes include: • the decrease in family size and more women working outside the home • the increased distance between where people work and live and more frequent job changes • lower retirement ages and longer life expectancy • the persisting or widening differential between female and male mortality • changing expectations of who should provide care and how it should be funded. All these factors affect the ability of individuals, families and communities to care for their own health. Set against these changes in the capacity of the community to care for its members, advances in care are enabling people to live longer, but with longer periods of poor health. There have been suggestions that advances in technology would result in a "compression of morbidity." In other words, that the proportion of life lived with significant ill health would not increase, or might even decrease, with increasing longevity. To date this aspiration has not been met. While there has been some success in delaying the onset of certain diseases (e.g. heart disease), there has nevertheless been an increase in older people's needs for care. These are often complex, although there is the potential for advances to change this situation. For example, Alzheimer's dementia is a major contributor to the care needs of older people.

The prevalence of Alzheimer’s disease has been rising, both because of increasing age and because of survival time being lengthened by better care. Current research efforts are directed towards understanding the aetiology of this condition and blocking the pathological process responsible. If this were to succeed, there would be a dramatic health gain of particular importance in reducing health care needs. Such changes do occur, for example the reduction in the incidence of tuberculosis in the 1950s and 1960s. However, it seems likely that even with such important gains, the need for care will increase over the long term. These considerations are causing health systems to review the way health care is financed and provided. On the finance side, there are debates about what types of care should be funded and how that funding should be raised (taxation, insurance or self-funding). On the provision side, the debate is about the balance between self-care, informal care from family, friends and unpaid volunteers, and formal paid care. In many countries, aspects of this care will be provided by different sectors or Learning to live with Health Economics IV- 61 bodies. For example, long-term care in mental health will involve important components of health, social security, housing and vocational care. This emphasizes the importance of an intersectoral approach, and the potential inefficiencies that can be generated by a sector-by-sector approach. During demographic and system change the costs of long-term care may change and the funding burden even be shifted between generations. For instance, a reform that moved from a tax-funded service for long-term care of older people to one that was based on individual insurance would mean one generation paying both for the care of the current generation of older people (through tax) and having to save to pay for their own care in later years (through insurance premiums). All analyses show that there is considerable capacity for health-promoting interventions to avoid morbidity and mortality and improve health. The point is correctly made that such interventions are often more efficient at generating good health than subsequent curative interventions. However, this is often translated into a reduced need for health care services in future. This may sometimes be true (for example, measles immunization reduces the incidence of measles encephalitis with its care needs), but generally is not. For example, interventions that reduce smoking levels, while clearly desirable and good for health, will not reduce care needs in the longer term. The onset of ill health may be postponed but will still occur, although over a longer life span. Plans need to be made for these consequences of better health, on the understanding that health gain does not necessarily equate to lower health costs. However, over time, new technologies will result in extensions of morbidity. As an example, the introduction of insulin for diabetes has improved the health of a significant number of people. However, it has also greatly increased the costs of health care. Costs rise to maintain the treatment of diabetes itself, and to deal 5 with conditions to which diabetics are prone, such as heart and kidney disease. Because of its burden, severe and enduring mental illness needs special mention. All health care systems spend a significant proportion of their resources in this area, with schizophrenia in particular consuming an important proportion of total health and social care resources. In many countries, people with schizophrenia and people with learning disabilities (mental handicap), who would in the past have been placed in institutional care, are now living in community settings and their life expectancy has increased. The rationale for shifting such care to the community was that it would deliver an improved quality of life, albeit that experience has tended to show that this is at higher cost. Whether the promise of quality is delivered depends on the strength of the communities in which they live and on the appropriateness of the system for commissioning and monitoring their care. It is clear that such needs have taxed the community’s capacity to care in many European countries. Primary health care as an organizational concept While primary health care is a description of an approach to care, it is also embedded in the organization of health services. How this works may vary from country to

country, but there are certain features that are important from the standpoint of health economics. For some or most secondary and tertiary care services, primary health care professionals act as gatekeepers. Different behaviour in primary health care can have profound effects on the distribution of costs and benefits. For example, decisions to refer patients with angina (chest pain) can have major consequences for the demand for secondary and tertiary cardiac services and for the equity with which such resources are used. Both effects, on demand and on equity, are important. **IV - 62 Learning to live with Health Economics Primary health care practitioners operate in a complex environment in which many factors impinge on decision-making.**

These factors include: • the public's and patients' expectations • the practitioner's level of training and knowledge • financial payment mechanisms and incentives • the practitioner's toleration of uncertainty • expert guidance • marketing by providers (e.g. of pharmaceuticals) • professional guidance on appropriate roles. All these factors have been changing. Consider the effect of the internet on patients' expectations, or the regulation of pharmaceutical promotions. Health systems should actively consider these influences and put in place an appropriate framework with the aim of managing them to produce greater health benefits at lower costs (and monitor the equity of existing or proposed arrangements). However, the results of changes in these factors are not always correctly predicted. For example, increased training and knowledge may lead to increased referral, because more opportunities for tests and interventions are recognized, rather than decreased referral with more conditions being treated within primary health care. In either case it is important to consider whether the changes are appropriate or not. In the case of pharmaceuticals, many governments try to influence the behaviour of physicians. Many, sometimes crude, incentives for lower prescribing costs have been introduced. However, low prescribing costs are not necessarily appropriate. There are areas such as antibiotic prescribing where physicians may over-prescribe, but there are areas such as asthma-preventing treatments which may be under-prescribed. The same argument applies to referral for secondary services. Effective interventions need to be carefully designed and should be informed by cost–effectiveness rather than cost-containment. Given the complexities of intervening at the micro level, many countries are taking on board a more sophisticated approach in the concepts of managed care, and with it integrated care pathways. These more sophisticated approaches look at patient care across different settings and providers, and seek to apply evidence systematically in the routine management and monitoring of care. This integrated approach can work with all the above influences simultaneously. Such approaches will profoundly affect the microeconomic environment for health care providers. There is good evidence to suggest that they can make systems more efficient and more effective. The organization of primary health care differs across Europe. It is growing in complexity with doctors, nurses, therapists, social workers and others needing to work together effectively as a team. Care is being delivered in many different settings, including people's homes, schools, workplaces and clinics. This varied practice requires an appropriate infrastructure, both as regards buildings and facilities and, just as importantly, in terms of information systems. The nature of illness in ageing populations means that most resources are directed at people with multiple problems, many of them chronic in nature. No one specialist, indeed no one sector, completely meets their needs. Much poor quality care results from a lack of communication and coordination. It is an important task of primary health care to address this need for coordination. How this is achieved will vary from system to system, but at a policy level it is an important means of increasing efficiency in the use of scarce resources and the quality of care. Learning to live with Health Economics IV- 63 The generation of inequity in primary health care is more

complex. Indeed equity itself has a number of dimensions, as has been discussed in Module 3.2.1. Primary health care resources are distributed more evenly than those for secondary or tertiary care. Therefore factors such as distance to a specialist centre will not be as important. However, important inequities can arise in primary health care; and primary health care can affect equity in the use of secondary and tertiary care. For example, research in the United Kingdom has shown that socioeconomic factors influence the length of consultations in primary health care, and there is evidence that referral for angioplasty is influenced by proximity to the treatment centre (4). In the light of the pivotal role that primary health care plays, some systems have developed reforms where primary health care practitioners (usually general practitioners) have greater control over how resources are used in secondary and tertiary care. Two of the best-known examples come from the United Kingdom in fundholding (which has been abolished) and primary health care trusts (which are currently being formed). Groves (5) talks about these changes. Values, benefits and resources in primary health care In a rational world, assisted by economic theory, decisions can be made about resource use based on the expected benefits. Economics provides us with a number of analysis paradigms, including those covered in Module 5.3.1, when discussing economic evaluation. These techniques are most effective when an intervention can be clearly defined, when it can be costed, when the outcomes can be measured, and when specific research findings can be generalized to a range of settings. In primary health care, each of these four requirements is likely to cause difficulties. Interventions are often difficult to standardize; costs are difficult to define and ascertain and may vary considerably; outcomes are often diffuse, uncertain in terms of timing, and involve wider effects than just the patient; and there can be wide variations between different primary health care settings, so that results may be difficult to generalize. Of course, none of these points is unique to primary health care, but they are particularly complex and important here. Exercise 2 This exercise is designed to develop understanding that lack of evidence is not necessarily evidence of lack of effectiveness. In the discussion, two points should be brought out: the difficulties of obtaining hard (e.g. randomized controlled trial) evidence for some parts of health care; and the danger that with the newer evidence-based initiatives (such as the United Kingdom’s National Institute for Clinical Effectiveness), resources are allocated to areas with hard evidence and not necessarily to those areas where the needs are greatest. Decision-makers in a health district are being asked to rate the relative priority of increasing the number of coronary angioplasties undertaken for heart disease and improving occupational therapy services for people with a learning disability. There is extensive published evidence concerning angioplasties including many randomized controlled trials. The literature for occupational

5 therapy is less extensive. (d) How would this difference in the available evidence disadvantage occupational therapy in allocation decisions? (e) How could such a disadvantage be avoided? IV - 64 Learning to live with Health Economics Other modules have discussed the vexed question of value. Much economic analysis relies on measuring the benefits of a specific intervention and then applying some sort of analysis to allow comparison and decision-making based on a utilitarian model. In other words, the analyst seeks to identify how to use resources to achieve the greatest good for the greatest number. However, it is known that, in day-to-day life, people do not think and act in this way. They hold a series of values, which influence decisions and outcomes. Thus a utilitarian conclusion about the use of, say, a new and expensive cancer drug, may well differ from the decision that an individual or community will make. Health economics can inform decision-makers, but not take the decision. Economic evaluations of secondary care interventions often look at the effects of a specific oneoff event in isolation. The marginal costs and benefits of that intervention are then examined. But primary health care is not, in the first instance, about discrete interventions for ill

health. It is about life and the quality of life as a whole. It is about frequent, sometimes continuous, interventions occurring in the life-span context. The individual's life span is framed by those of family, friends and community. This highlights the problem of applying marginal analysis to what is appropriate at any given time, because there is a danger of losing the health and quality of life for individuals as a whole. Average health ceases to matter; only added longevity is a benefit. One consequence of this is that death can never be healthy. Death becomes the inability to squeeze additional life out of an individual at an acceptable cost. In other words, death is a failure. One way of avoiding this paradox is to look at health across the whole life, and ask whether a particular intervention would make a significant difference to the average health of an individual across his or her life span. Neither approach is exclusive of the other, although marginal analysis tends to predominate in all health sectors. However, primary health care decision-making is more likely to draw on a whole life analysis than secondary or tertiary care. The decision-making of individuals, communities and professionals is influenced by these considerations. Warren et al. (6) explore these issues in more detail. Exercise 3 This exercise is about thinking through values, and how people in real life think about and talk about benefits. Participants should draw out potential differences between the professional's, the individual patient's, and society's points of view, and discuss which view is predominant. For a more technical discussion, they might like to read Tsuchiya (7). Consider the following scenario: a 70-year-old person presents to his/her doctor with incurable cancer. Treatment with a toxic course of chemotherapy and radiation adds an average six months to life. Without treatment, average life expectancy is four months. End-of-life symptoms are the same with or without treatment (in other words, the final course of the illness is neither better nor worse with treatment). Treatment is unpleasant, may cause complications and involves periods in hospital. It lasts for three months. Treatment accelerates death in 10% of cases. (a) Does analysis of marginal benefits differ from a whole-life benefits approach? (b) Is this of any practical consequence? (c) How important are any differences between whole-life and marginal approaches in the real world? Learning to live with Health Economics IV- 65 Community involvement The concept of communities is at the heart of primary health care. Communities can be of many sorts. They are not just geographical but can include any group joined by a common interest. For most of us, good health includes a sense of belonging and the opportunity to participate in communities. In many systems the burden of financing health care has become divorced from the consumption of health care. These issues were discussed in Chapter 3. If there is no payment at the point of use, and there is no direct financial consequence for a local community from consuming greater resources, then there will be an incentive to over-consume. If, in addition, expenditures in different sectors are ring-fenced and cannot be applied flexibly to achieve the greatest efficiency, then significant technical and allocative inefficiencies are likely to occur. In such situations, it is difficult to engage local communities in decision-making processes. Primary health care advocates that there should be effective decision-making power vested in local communities and that their ability to exercise this power should extend across sectors. For example, a programme to help young people misusing drugs should be able to use resources flexibly across health, law enforcement, education, social services and other sectors. The means by which this happens will vary, but action can be taken both at a policy and legislative level, and at a local district level. In another example, one of the key determinants of health for older people is a feeling of security in their own community and home. Efficient systems would ensure that resources could be applied flexibly, if necessary between sectors, to meet this need. Such approaches may significantly change resource allocation decisions. Effective means are

required to involve local communities in the decision-making process. How such involvement occurs will depend very much on the specific setting. It may be through legislatively determined democratic structures, or through other means. Such participation can build the health of communities as well as contribute to specific decisions on the allocation of resources. In many areas, communities are caught in a catch 22 position. If there is no meaningful involvement in local decisionmaking, people do not participate. If people do not participate then there can be no process of meaningful involvement. Decision-making can easily become dominated by special interest groups. As discussed in Chapter 3, the chief health care resource is informal care, provided within communities themselves. The capacity of communities to continue to provide this care is crucial, particularly for long-term care. Older people, when asked for their preferences, are consistent in their responses. They want to receive the necessary care the same as anyone else. They want to stay in their own home if at all possible. If they have to move, they want to stay as close to their home as possible and maintain their social networks. This presents a challenge to society. It is always possible to maintain someone at home; it just becomes increasingly resource-intensive with increasing dependence. The demand for such care will rise with the increasing number of old people and the increase in their length of life with significant morbidities. The ability to meet this demand will depend on the social policies adopted, which will, in turn, affect the need to finance formal care and the ability to meet older (and other) people's preferences. Throughout this module, the importance of public expectations is emphasized. In other modules the concept of consumer sovereignty is discussed. Public expectations work at many levels, and in very particular ways because of the asymmetry in knowledge between the consumer and the provider. Some examples of beliefs and expectations that may be widely held are: IV - 66 Learning to live with Health Economics • a sick person should see a doctor rather than a nurse • an antibiotic should be prescribed for a cough • specialists know more and give better treatment than generalists • screening programmes should never give false negatives (e.g. for cervical cancer) • doctors know best • big acute hospitals give better care than local community hospitals • back pain has a mechanical cause • experts keep changing their advice on what is a healthy diet. Of course, some of these beliefs and expectations may be true, or at least true in some contexts. But the point being emphasized is that where there is an asymmetry in knowledge about the need for treatment and the quality of that treatment, these expectations have special significance. In general, they run against the development of primary health care and overestimate the potential for clinical services to improve health. There are complex interactions between these expectations, the political processes and the media that are beyond the scope of this module. However, a reasonable conclusion is that whether it is at the individual level (e.g. prescribing of antibiotics), the district allocation level (e.g. big hospitals are better than small), or national policy level (e.g. experts keep changing dietary advice), these factors are of central importance to the efficiency and effectiveness of health systems. Public health and primary health care In this and other modules, examples of public health-type interventions have been discussed. Such interventions often score highly on cost–effectiveness analysis but may well involve sectors other than health. Examples given have included seat belt legislation (little health sector involvement), smoking (important component from the health sector as well as other sectors), and immunization (mostly the health sector). The need to consider health production in an integrated way across all sectors has been emphasized. But there is a second more difficult dimension. This concerns the orientation of health sector staff. Traditionally, doctors and other health care staff have understood their roles in terms of a one-toone relationship with patients. In all systems, this conception is supported by many factors, for instance ethical codes and public expectations. But there is a parallel component of clinical practice that has public health objectives. This is

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most simply seen in the case of immunization. In many countries, family doctors are involved in the administration of immunizations, and in so far as an individual patient has the capacity to benefit from immunization (for instance against rubella), this can be regarded as an individualbased decision. But population coverage rates for such an immunization are crucial to its effectiveness, and immunization programmes attempt to protect through herd immunity as well as individual immunity. A dual goal of individual benefit and population benefit is, therefore, being pursued. In the case of rubella, the immediate benefits of immunization are not to the individual, but to the unborn children who might be infected during pregnancy if wild rubella virus circulates. Sometimes the advice given by clinicians immunizing a child is coloured by these differing objectives, but since the individual interest and the public interest usually coincide in immunization, it is rarely a problem. But the public health aspects of clinical practice can be much more problematic, particularly when the opportunity cost concept is applied. Clinicians must ration their time between the competing Learning to live with Health Economics IV- 67 demands of patients. Time spent with one is often at the expense of time with another. Using resources for prescribing for one patient, or referring to secondary care, will limit the resources available to other patients. In some systems, this may be very immediate. For example, there may be a limit on the total cost that will be financed by the state for that doctor. In other circumstances the links may be more distant, for example that an overrun on the country's expenditure on drugs leads to restrictions on some service or another. But however it operates, opportunity cost is always pitting one benefit against another. The important point here is that an open understanding and acknowledgement of responsibility for these wider public health consequences of individual clinical practice is likely to lead to a more efficient system and better health outcomes. Such understanding is in part a function of training and knowledge, but it is also deeply dependent on social and cultural factors that may be difficult or slow to change. However, the issue should be acknowledged, and appropriate action taken in the differing local contexts throughout the European Region of WHO. Shifting the health care balance Since HEALTH21 is focused on primary health care, the question arises of how the balance can be tipped towards such care. The promotion of the primary health care concept is not new. Yet, despite more than 50 years work, health care systems still invest predominantly in secondary and tertiary care. Many commentators have noted that much health care is either of unproven benefit or is known to be ineffective. Powerful forces maintain this pattern, and understanding is required of the practical means by which change can be achieved. In this and other modules, many factors have been identified that militate against shifting the balance. These include: • the poorly defined nature of interventions in primary health care • the higher esteem in which specialists are held • the invisibility of much primary health care • the sometimes long intervals between interventions and benefits (e.g. health promotion) • the loss of the personal interest factor in public health-type interventions • the drama of high technology intervention in secondary and tertiary care. So what are the opportunities for implementing this shift towards a greater emphasis on primary health care envisaged in HEALTH21? The shift is not a matter of taking from one sector and giving to another (which is unlikely to succeed), but a reorientation of the whole system to primary health care. Clearly primary health care is not a good in itself. It has to be justified on the basis of better health production. This will result either from lower costs than the alternatives or increased effectiveness, or both. Where it has been possible to estimate the cost–effectiveness of primary health care interventions, primary health care often looks attractive. Tables of cost per quality-adjusted life year, such as those given in the discussion of economic evaluation, show low cost per quality-adjusted life year. However, for

many potential interventions, adequate economic analyses are still not available. Two important areas where a shift has been occurring in many countries are day surgery and community care. The move to undertake many traditional inpatient surgical procedures as outpatient procedures has lowered unit costs, at least in the health service, but is equally effective. Indeed the move of such services towards primary health care probably delivers additional benefits. Moves from IV - 68 Learning to live with Health Economics residential to community-based care for those with learning disabilities (mental handicap) and longterm mental health problems have, usually, been able to demonstrate benefits for the individuals involved, although good quality has generally meant increased total costs. Some other examples (but not a comprehensive list) of areas in Europe where the potential to develop primary health care has been recognized are: • improved rehabilitation services enabling more people to go home rather than to institutional care; • intermediate care inpatient facilities (such as community hospitals); • more community-based palliative and terminal care services; • increased use of telemedicine to aid diagnosis and primary health care management; • managed care, often nurse-led, for chronic conditions such as diabetes and epilepsy; • effective primary and secondary prevention, for example, in relation to high blood pressure and in aspirin prophylaxis after a heart attack; • early supported discharge after acute and elective admissions. The human capital approach was discussed in Chapter 2. While major illness and disability can have a large impact on individuals' health, such conditions are not common in the population. On the other hand, a great deal of ill health is related to common chronic conditions that are chiefly seen in primary health care. Some examples are: low back pain, anxiety and depression, and stress. These conditions not only result in poorer health for the individual, but (through work absence) have major costs for the economy in lost production. Such conditions commonly present to primary medical care, but the responses needed are varied and often involve other sectors. Alleviating the associated ill health requires an integrated approach that may include components of clinical treatment, but should also include a society-wide approach to prevention. So the potential is there, but realizing it is not straightforward. However, the balance is only likely to tip towards a greater emphasis on primary health care if there is effective management of resources across the entire health sector and proper appraisal of new technologies before their widespread use. In particular, the effects on informal care and the impact on local communities must be taken into account. While the practical issues may differ across the sectors, these decisions need to be made (and the case for primary health care supported) by sound arguments appropriately informed by economic analysis. The decision-making process needs to be participative, and the balance tipped from professional sovereignty to community and consumer

5 sovereignty. Exercise 4 This exercise is designed to bring out the intersectoral nature of health, and the importance of factors such as public belief (e.g. about the physical cause of back pain injury), income maintenance systems, litigation and legislation, and employers' practices. Participants should understand the massive health impact of back pain and how dysfunctional most systems are in dealing with the problem, either from the point of view of improving health or from the point of view of production in the wider economy. An additional point could be made about treatment for back pain (it was bed rest; now the advice is to keep active through the pain), and how this change of advice is affecting the understanding and behaviour of different actors (patients, professionals, employers, judges, etc.). In the United Kingdom, expenditure on diagnostic and treatment services for chronic back pain has increased. Yet over the last twenty years, the number of workdays lost has also increased markedly. Learning to live with Health Economics IV- 69 There is no evidence that there has been any increase in back injuries or in any disease of the spine to explain this. (f) What might be the causes of this increase in workdays lost? (g) What steps should a

health district consider taking to improve health in this area? In the specific context of one country’s systems, consider how arrangements for working across different sectors help or hinder an integrated approach to implementing a strategy for reducing ill health in this area (or others). Ageing and health care provision This module has touched on a number of issues specifically related to ageing. These include: • the importance of informal care • the ageing demographic profile • changing capacities in communities to provide informal care • morbidity and complex health care needs later in life • changing dependence ratios. This section covers some specific issues that are important in health care provision for older people, which is an increasingly significant area in the WHO European Region. Health promotion and prevention are often thought of in relation to children or younger people. However, it is important to realize that some health-promoting interventions are actually more effective in old age. Thus there is evidence that old people were being denied treatment with thrombolytics (clot-busting drugs) after a myocardial infarction (heart attack), although the evidence shows that such interventions are actually more cost-effective in older people because of their higher absolute risk of death and complications following a heart attack (11). In general, preventive interventions for older people have a quicker pay off (e.g. programmes to prevent falls) and a greater absolute benefit because of the greater risk of the adverse event occurring. It is important for health systems to recognize these opportunities for improving health. In the older age groups, health care needs are more often multiple and long-term, and straightforward conditions more frequently become complicated. This is a challenge to the organization of health care and requires more complex systems to support care adequately. Older people need access both to the best specialist care (and often a number of different specialist areas at the same time), and to good general support and care. Few health systems would claim excellence in meeting this challenge, which often gives rise to significant inefficiencies.

In responding to this challenge health systems have generally come to a number of conclusions: • health care needs to be organized around the patient; this requires care management and the creation of care pathways; • because many different individuals and organizations are contributing to care, communication is important; this requires increased expenditure on information systems and technologies; • care requires coordination and cannot usually be left just to specialists; primary health care is, therefore, of particular importance as it provides the continuing generalist support. Each health system will tackle these challenges differently. But there are a number of common features that arise.

IV - 70 Learning to live with Health Economics The health sector is often working alongside a number of other sectors, particularly income support, social care and housing. Very often, there are separate ways of financing and providing care in the different sectors. Thus the funding of care in hospital may be different from that in a nursing home or at home. Or people at home may get free health care but have to pay for social care. Income support may be dependent on the setting in which a person lives. Where a system is fragmented, these “boundary issues” will create inefficiencies. For example, patients may stay in hospital (which is expensive), because services to meet social care or housing needs are not in place or are not funded. Different actors may try to shift costs. For example, social care providers may encourage admission of a person to an institution to avoid the costs of home care. These inefficiencies will be both in terms of additional costs and in terms of poorer quality of care (lower benefits). Avoiding these inefficiencies is both a matter of good planning and design of the health and social care system, and good protocols and working arrangements for the staff who are actually providing care. Informal care plays a larger role in the

care of older people, but there is commonly an asymmetry between men and women. Women, on average, live longer than men do. Therefore a man is more likely to have a partner who provides care in old age than is a woman. As discussed previously, changing social patterns will have dramatic effects on the availability of informal care. In many countries such care is supported by voluntary (unpaid) services, for example meals on wheels and community transport initiatives. Where informal care is strong, there is a lower reliance on institutional care. But the strength of informal care is determined by a host of factors, including the availability of formal care. Communities need to think carefully, therefore, about what type of care they want for their older people, and understand the complex interrelationships that support their current system and how interventions and secular trends will affect it. In every system, there is a tension between the demands of secondary and tertiary care for resources to fund acute health care interventions, and primary health care, where the emphasis is on care rather than cure. This does not just concern revenue to run services, but capital to develop facilities, investment in training staff and approaches to patients. For example, if health care staff are trained in isolated specialties, and the status of generalists is perceived to be low, it will be difficult both to recruit suitable generalist staff and to ensure that specialist staff understand the importance of interdisciplinary working. Thus health care systems need to look at how they plan their health workforce, and how different disciplines are trained. It is important to recognize the special issues that health care for older people raises. However, most older people are healthy and able and want to play a full role in society. Healthy societies will not treat older people's health and welfare as something apart, but will ensure that they have both equitable access to health services and a full role to play in life.

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4.4.2 Citizens' participation, patients' rights and ethical frameworks Manfred Wildner and Oliver Sangha10 Key messages • Traditional economic theories of individual preferences do not adequately describe the demand in health care markets, which is also influenced by providers and public health interventions. • A knowledge of theoretical frameworks of ethics and rights and strategies for their implementation is of great importance for health economists when they regulate or influence the market. • Citizens' participation, patients'

rights and consumers' rights will play an increasingly important role in medical practice as well as in the health care market in the twenty-first century. Strategies for the implementation of these concepts range from advocacy models over implicit legal reinforcement to explicit charters of health rights. • Utilitarian frameworks of assessment such as cost–effectiveness analyses are likely to be supplemented increasingly by approaches that are sensitive to health rights in discussions about rationing and priority-setting. Standardized strategies to assess health outcomes from a rightsbased perspective are likely to be developed. Tutors' notes This module is highly relevant to economic thinking in relation to health and health care, although the matters discussed are often not discussed in much detail in health economics textbooks or courses. Traditional economic theories of individual preferences do not describe at all adequately the full 10 This module was prepared by Dr Manfred Wildner of the Bavarian Public Health Research Centre, LM University of Munich, Germany (e-mail: wil@ibe.med.uni-muenchen.de) and the late Dr Oliver Sangha, former Head of the Research Unit at the Centre. IV - 72 Learning to live with Health Economics complexity of the demand in health care markets. A knowledge of theoretical frameworks concerning ethics and rights as well as strategies for their implementation is highly relevant for health economists as they can regulate and influence markets and the behaviour of participants on both the supply side and the demand side. It is probable that citizens' participation, patients' rights and consumers' rights will play an increasingly important role in medical practice and in other health and health care markets in the future. The module is relevant to all four of the groups of potential users that have been identified for these learning materials.

Knowledge of the relevant theoretical concepts, the available strategies for their implementation, the main implications, and their interaction with more traditional health economic approaches (such as economic evaluations) is relevant to the following. • Very senior decision-makers: for example, in many European countries a high proportion of citizens are very or fairly dissatisfied with their health care systems, and it is likely that much of this dissatisfaction is related to how patients and citizens view their rights as being met (or not). • Managers and health professionals, who are the key components of how the health and health care systems work in practice. To the extent that many citizens and patients are dissatisfied there is, at least, room for questioning current approaches and performance, and probably room for significant improvement. • Members of various concerned public groups. These often represent the channels through which dissatisfaction is articulated, for example, protests by unions, discussions on television or radio programmes or in the print media, comments by consumer organizations, voluntary bodies or nongovernmental organizations. The various concerned public groups often represent some of the avenues through which improvements are sought, or participate in the fora (e.g. hospital boards) where broad ethical frameworks, the specific rights of citizens and patients and decisions about priorities in the use of scarce resources interact. The module can be used at the three levels of appreciation, appraisal and analysis. In contrast to many of the other modules, the levels of appreciation and appraisal are equally relevant in relation to this module for each of the four main groups of potential users. Even analysis, broadly conceived, could be relevant to participants from each of the four groups of users. Indeed, this may be a module where it is particularly important that participants from all groups address the difficult issues that are raised, even if they are initially rather reluctant to do so. The ethical frameworks are relevant to them all, even if their practical implications may sometimes be uncomfortable for policy-makers, practitioners and commentators. A health service that seeks to retain the confidence of its patients, its political constituency and its funders cannot afford to ignore the important

issues which are raised in this module. The four exercises are all related to consideration of a particular example, the planned introduction of genetic screening for breast cancer predisposition, but focus on four different aspects. The first exercise is concerned with different forms of accountability; the second with different aspects of patients' rights; the third with different aspects of ethics; and the fourth with the different issues which can arise for advocacy. Each of the exercises could be used by a single one of the four groups of potential users. However, they could also be used with a group which included members of the four different groups or the different stakeholders in health and health care. They could really be members of the different groups or assume these roles for the purpose of the exercise. Learning to live with Health Economics IV- 73 Introduction The purpose of this module is to provide an overview of patients' rights, citizens' participation and ethical frameworks in respect to health care systems. In order to do so, the module offers background in two areas: firstly, it provides a brief introduction to theoretical concepts, which are important for the understanding of these relationships. Secondly, it analyses the strategic options to strengthen citizens' participation and patients' rights in health care. The recent surge of the patients' and consumers' rights movement in Europe is strongly influenced by developments in the United States which arose in the 1970s from a combination of factors: a higher level of public education; a rising awareness of the dangers of medical technology; distrust of experts and a professional crisis in health care; the rise of consumerism; and the civil rights movement. It has been claimed that the era of the patient has begun. Table 1 shows the level of dissatisfaction (very or fairly dissatisfied) of citizens in several countries with their health care system (1). The term "citizen" needs to be analysed further. Many roles of citizens as individual lay persons can be distinguished in health care: patient, insured person, employed person, consumer, customer, user, client, taxpayer, voter, member of a self-help group, parent or guardian caring for a child, or child caring for a parent. The legitimate representation of their interests is claimed by several groups: consumer organizations, self-help groups, self-appointed patients' representations, sickness funds, political and professional organizations. Their have diverse motivations: to assure market transparency and fair market competition or to achieve cost-cutting by informing consumers, to empower citizens and to strengthen consumers' rights, to advocate the needs of specific groups or to lobby professional interests. From a neoclassical market perspective, demand for health services is determined by the decisions of individuals who spend health care money according to their preferences. However, demand in the health care sector is embedded in a complex system of financing, solidarity and accountability. Although demand for health services reacts flexibly to the resources available, there are differences from traditional
5 markets: a surgical procedure is very different from a holiday trip, and patients may want to avoid this experience if possible. Provider-induced demand may play an important role in increasing the request Country Percent dissatisfied Country Percent dissatisfied Austria 4.7% Italy 59.4% Belgium 8.3% Luxembourg 8.9% Denmark 5.7% Netherlands 17.4% Finland 6.0% Portugal 59.3% France 14.6% Spain 28.6% Germany 10.9% Sweden 14.2% Greece 53.9% United Kingdom 40.9% Ireland 29.1% Table 1. Level of dissatisfaction with health care systems (%) Source: Mossialos, E. Citizens' views on health systems in the 15 Member States of the European Union (1). IV - 74 Learning to live with Health Economics for health care services, while the availability of preventive services may lower the demand for specific services. "Regulatory" activities such as immunization, mass media campaigns, environmental sanitation or provision of clinicians' or patients' guidelines may have a marked influence on the delivery of specific services. Health rights may also be a factor in rationing and priority-setting. It is, therefore, important to realize that the demand in the health care market is influenced not only by individual preferences but also by providers with a

privileged level of information and specific interests and by population-wide public health measures. Accountability for health service delivery rests not only with economic market theories but also with aspects of health care legislation, professional conduct, public health, ethics and politics. It is evident that patients' rights and consumers' rights will gain importance in medical practice as well as in the health care market in the twenty-first century. A knowledge of theoretical frameworks of ethics and rights as well as strategies for their implementation is of great importance for health economists as they may serve to regulate or influence the market. Theoretical concepts Citizens' participation Among the many roles that can be assigned to citizens in health care systems, the traditional label "patient" reflects a special situation of the sick individual which is characterized by illness, functional impairment or disability and increased vulnerability. Impairment ranges from a limited rationality due to pain and anxiety over somatic and cognitive functional deficits to a complete loss of consciousness. The patient–doctor relationship in this context is characterized by the special need of the sick individual to be protected and is best described as a relationship of trust. The role labels "consumer", "customer", "user" or "client" reflect an economic point of view and require that the sick individual is acting as a rational agent. He or she therefore needs full information and a transparent market. The doctor–patient relationship is understood as a business relationship. Role labels such as "citizen", "voter", "taxpayer" or "insured" reflect a rights-based approach and make reference to democratic values and basic rights. The doctor–patient relationship is here characterized by a contractual model. Citizens' participation in the health care system is often discussed under the major headings freedom of choice, patients' rights, the autonomy of the patient and political influence. Freedom of choice and the autonomy of the patient are fundamental principles of health care ethics and will be discussed in this section. Patients' rights will be discussed later together with international human rights legislation. The quest for political influence of citizens on the health care sector at the systems level is the realization of a basic democratic right. The discussion of citizens' participation in the health care system can be focused by distinguishing levels of accountability. "Accountability" defines who has to report to whom and who is able to reward or punish actions. In health care systems there are various forms of accountability – clinical accountability, ethical accountability, professional accountability, legal accountability, economic accountability and political accountability. Clinical accountability is the accountability for providing the highest possible standard of care. Clinical quality assurance may be discussed as to structure, process or outcomes criteria. Citizens or patients may be involved through participation in councils deciding on budget allocation to health care infrastructure, staff levels, training or quality assurance programmes. Moreover, they may demand information on complication rates, case mix or the volume of certain procedures in a given institution. Learning to live with Health Economics IV- 75 Ethical accountability is the accountability for the patients' autonomy and integrity. Ethical boards supervising biomedical research or supporting difficult choices help to secure the citizens' interest. At the systems level, legal mechanisms may have to protect these interests, for instance forbidding "gag clauses" (information restriction) in managed care systems or providing legal redress in the case of infringement of rights. Professional accountability requires the setting of minimum standards for professional accreditation in health care. This accountability often lies with professional organizations and accreditation councils. The undertaking to observe codes of conduct is frequently part of the accreditation. These codes of conduct may also incorporate citizens' views. Legal accountability relates to the legal regulation of health care financing and provision and may take place at national, regional or community level according to the constitutional provisions. Democratic procedures should assure citizens'

representation. Economic accountability relates to the efficient allocation of limited resources. There is considerable variation in practical resource allocation, as demonstrated by the variety of health care systems internationally and nationally. This variation reflects different priorities and political frameworks. Boards of overseers or councils deciding on resource allocation are entry points for the participation of citizens. Political accountability relates health care decisions to the government and to society in a broader sense. In democratic states this means accountability to the citizens. It limits the influence of payers or providers on agenda-setting in health care. Citizens' participation in political issues may be more or less explicit, according to the political system in place. The relative weighting of the various forms of accountability differs between countries. Taxfinanced health care systems, as in the Sweden or the United Kingdom, emphasize the political accountability of health care decisions and also the professional accountability (e.g. delegating responsibilities to professional organizations). Market-oriented health care systems, as in the United States, put more emphasis on economic and legal accountability, as the health care market is regulated by a legal framework. Bismarck-type health care systems, as in Austria or Germany, prioritize professional and economic accountability in the framework of self-governance. Exercise 1 Discuss the issue of introducing genetic screening for breast cancer predisposition under different forms of accountability. Each participant may choose a specific aspect of accountability. Patients' rights Patients' rights have become a high priority in health politics. The need for the development of patients' rights emanates from a new role that informed patients want to play, stemming from scientific, ethical and moral concern, and the human rights movement in health care, including experience with (mis)managed care. Patients' rights as health rights can be linked to human rights legislation, for example the Universal Declaration of Human Rights, the International Covenant on Social, Political and Cultural Rights, the European Social Charter or the European Charter of Fundamental Rights (http://www.europarl.eu.int/charter/, accessed 6 November 2002). Article 3 of the last-named affirms the right of informed consent, article 34 the right of access to social security and article 35 the right to preventive measures and health care at a high level, and article 38 protects consumer rights. IV - 76 Learning to live with Health Economics The "right to health" is often not explicitly specified in identifiable and legally binding obligations. Health and human rights as interlinked concepts, however, are a promising new avenue of practical and scientific progress in public health. The articles of international human rights documents follow four human rights principles: equity, dignity, participation and justice. These fundamental aspects of human rights legislation can be found in patients' rights documents under more specific formulations, e.g. respectful treatment, confidentiality and privacy,
5 equitable access to information and facilities, and provision of mechanisms for legal redress (ombudspersons, patients advocacies, litigation, etc.). Generally, there is a distinction between "negative" rights, which assure freedom from infringements of certain essential liberties, such as freedom from inhumane or degrading treatment, and "positive" rights, which specify entitlements like the right to decent living conditions. Negative rights have been much less controversial in the past than positive rights, the fulfilment of which may require changes in the social systems of states. What are the potentials of a human rights approach to the health of individuals and of populations? It has been proposed to direct research in the field of health and human rights in three directions: • first, towards the health effects of human rights violations; • second, towards the human rights effects of health service provision or legislation; and • third, towards the investigation of the mechanisms underlying the relationship of health and human rights. This approach reflects a comprehensive understanding of health as expressed by, for instance, the Ottawa Charter on Health Promotion (2). The political, social and psychological mechanisms underlying the relationship of

health and human rights deserve attention. Political influences causing disparities in health status relate to the availability, accessibility, acceptability and quality of health care, external environmental or workplace factors, issues of governance, the globalization processes, legislation or the provision of information, among other things. The effect of social inequality on health is well established, as is the association with social class, race or ethnicity, gender, family and social networks, or work. Among psychological determinants of health, interactionist concepts are of special interest for the field of health and human rights. They focus on the health effects of the quality of relationships. It is claimed that the patient is not only made vulnerable by illness, but also by the institutional processes of care and cure and the traditional role of the sick which legitimizes some privation of autonomy. The American Hospital Association issued a patients' bill of rights in 1972 in recognition of this special situation, and a national bill of patients' rights has been proposed for the United States (3). In 1996 the WHO Regional Office for Europe issued a Declaration on the Promotion of Patients' Rights in Europe as a common European framework for action following the Amsterdam Consultation on Patients' Rights (4). This document contains specific sections concerning human rights and values in health care, information, consent, confidentiality and privacy, care and treatment and their application. Patients' rights and citizens' views were endorsed by the Ljubljana Charter on Reforming Health Care of 1996 (5). There are voices in favour and against elaborating patients' rights further. An explicit consideration of health rights and of the patients' perspective however fits well with a general democratic evolutionary process in many countries. The provision of reasonable standards of care is of equal importance for countries with a poor health care infrastructure, for countries with national health systems and an ongoing debate over rationing and priority-setting, and for countries with libertarian market systems and a competitive managed-care environment. Learning to live with Health Economics IV- 77 Exercise 2 Discuss the issue of introducing genetic screening for breast cancer predisposition from a patients' rights perspective. Each participant may choose a specific aspect of patients' rights (human rights and values in health care, information rights, consent, confidentiality and privacy, adequate care and treatment). Ethical frameworks Distributive justice and the autonomy of patients are fundamental principles of health care ethics, next to beneficence (do good) and non-maleficence (do not harm). Inequality and inequity are concepts that are related to distributive justice. Inequality relates to differences in health states, e.g. between groups or individuals defined by socioeconomic status, sex, ethnicity or place of residence. Although high quality health care systems will diminish such differences in health states, e.g. by comprehensive coverage and provision of services directed to the disadvantaged, it is clear that health inequalities will persist to a certain extent under any circumstances. Inequity relates to issues of fairness such as the access to health services, their financing and their practical provision. Inequalities in health outcomes, such as life expectancy, quality of life and satisfaction may, therefore, be influenced by inequities in the health care system. Measurement of health outcomes and their comparative analysis for vulnerable subgroups may contribute to assuring greater levels of equity of health care and equality of health states. It is important to note that distributive justice and efficient allocation of resources may sometimes be at odds. It is claimed that the institutional processes of care and cure and the traditional role of the sick legitimize some privation of autonomy. Patients' autonomy comprises the meanings of free action, effective deliberation, authenticity and moral reflection. Free action focuses on health rights such as the right to decide on treatment options and effective deliberation on the rationality of the decisionmaking process in view of information levels and cognitive ability. Authenticity requires the consistency of a choice with personal preferences and life plans, while moral

reflection makes reference to consistency with beliefs and values. The information given to the patient on his or her health state and options for treatment, the right for him or her to adequate access to health care facilities, selfdetermination and free choice of health care provider, as well as issues regarding consent to treatment, participation in studies and participation in teaching of health care professionals are all related to choice. They are part of most charters of patients' rights and hence are important procedural and structural aspects in the evaluation of health care systems and their outcomes. Beneficence relates to the efficacy and effectiveness of health care, non-maleficence to risks and adverse events of medical diagnosis or cure. It is clear that, generally, the risks and benefits of medical interventions have to be counterbalanced. It is important to be aware of the broader conceptual framework within which health care systems operate. Frequently a utilitarian economic framework is used in the evaluation of health care systems. This aims at the maximization of the aggregated health state, or health gain, for a population in respect to resources spent. To this end it is bound to conflate a multidimensional health state into a single number – a "utility" – for comparative evaluations such as cost-utility or cost-benefit analyses. Considerable work has been done supplementing traditional life tables and mortality statistics with morbidity-oriented utility measures such as quality-adjusted life years (QALY) or the disability-adjusted life years (DALY) used for the "global burden of disease" study. These utilities value not only the quantity of life years, but also their quality. Their values are summed up across a population or population IV - 78 Learning to live with Health Economics subgroup (e.g. a defined group of patients), and high losses of single individuals may be balanced by a net benefit for the group as a whole. Consequent applications of the utilitarian framework, e.g. the creation of league tables of preferred health care interventions (State of Oregon in the US) or the comparative evaluation of health systems performance (6) have met considerable resistance and criticism. While utilitarianism favours the effective delivery of services with benefit for everybody's quality of life, egalitarian ethics in contrast focus on the worst-off in society and their rights and would regard a disproportionate allocation of resources to these individuals as fair. In practice this could mean that under one health care ethic the allocation of resources, e.g. to dental care, is preferred, as this has some benefit for a large number of people, while under another ethical framework organ transplantation or dialysis are funded in order to save the lives of the worst-off at high costs. Exercise 3 Discuss the issue of introducing genetic screening for breast cancer predisposition from an ethical perspective. Each participant may choose a specific aspect of ethics (utilitarian concern for the aggregate good, egalitarian concern for the worst off, issues of inequality, inequity, free action, effective deliberation, authenticity or moral reflection).
5 Strategies for implementation Advocacy and patient empowerment The health rights approach is potentially an effective way to advocate change for the protection and promotion of health. The following are examples of questions that could be asked. • Are there provisions to guarantee fair participation in decision-making? • What are the health rights infringements of a proposed legislation? • Do patients or citizens have the possibility to file complaints? • Is personal dignity protected? • Is there discrimination between population subgroups? Although the United Nations have installed a regular reporting system on the fulfilment of human rights in their member countries, this is not specific for health care and may miss more subtle or hidden structural infringements of health rights. Several models of advocacy exist within a rightsbased approach to fill this gap: the contract model of citizens' advocacy, the self-advocacy model, a collective or corporate political advocacy and the advisory casework model of consumer self-help groups. Examples for actions are a health rights assessment of pending legislation, a human rightssensitive approach in the evaluation of health care, the promotion of information rights, installation of ombudsman systems, patients'

advocates and patients’ rights charters, the confidentiality of personal data including genetic information, participation in decision-making, rules on terminal care and palliative medicine, monitoring of abusive practices in psychiatry, legislation against genital mutilation, restrictions on compulsory treatment, rules on experimentation on humans and especially on vulnerable persons, care for migrants’ health and exploration of the ethical dimensions of genetic testing and manipulation. Learning to live with Health Economics IV- 79 For effective advocacy, the first step is to bring partners together. Eight categories of potential partner can be identified, and it is useful to have links to individuals in all these categories: (i) the professional category (health professionals, legal professionals); (ii) public institutions (state officials) (iii) nongovernmental organizations working with advocacy and service delivery (iv) intergovernmental organizations (v) ordinary citizens (vi) patients (vii) payers (viii) providers/the industry. The second step is the definition of points of entry. Five entry points can be defined: (i) the policy-making process (e.g. councils and boards) (ii) the norm-setting environment (professional organizations, legislature, IGOs) (iii) the service delivery area (iv) research agenda-setting (v) education. Advocacy can benefit from voluntary help, but effective action requires planning and, as a third step, funding, which may come from the potential partners listed above. Regarding the planning of actions, a typology of patient-empowerment, with options ranging from moral suasion through formal political control to countervailing power, has been proposed. Institutions for moral suasion could include patients’ organizations, ombudspersons and patients’ advocates. More formal medico-legal options are medical litigation laws or settlement councils. Economic influence can be exerted by free choice of the insurer (the payer), physicians and hospitals (the providers). More formal political control is instituted by a democratic legitimization of finances and the health services infrastructure. Patients’ participation in treatment decisions is supported by the right to an option for a second medical opinion, shared decision-making or free access to medical specialists. Countervailing power is instituted by direct budget control or the budget relevance of the patients’ choice of providers. Exercise 4 Identify and discuss issues for advocacy arising from a planned introduction of genetic screening for breast cancer predisposition. Legal provisions There is a fear that expanding the privatization of health services restricts access to them to individuals who are privileged enough to participate in the health care market. In response, a debate has begun on supplementing economic rationalist arguments by rights-based legal standards of care for everybody. The right to health often exists only in statements of principle and has not yet been translated into positive, legally binding obligations at national level. The health rights approach constructs health as a legal entitlement, not as a privilege, a commodity or a product of charity. Laws may concern the prevention of violations of health rights (“negative” rights), or their fulfilment (“positive” rights). A monitoring capacity for the observation of health rights can be created, and the public can be informed of their health rights through the mass media and education. It is claimed that the right to health is IV - 80 Learning to live with Health Economics inextricably linked to other human rights and that they should be promoted together in a multifaceted way. Generally three legal strategies can be distinguished: (i) not to create provisions for patients’ rights, (ii) explicit parliamentary legislation of patients’ rights, and (iii) the drafting of patients’ rights charters by non-parliamentary conventions. A WHO-sponsored Consultation on the Development of Patients’ Rights in Europe held in Gothenburg, Sweden in 1997, differentiated between European Member States which had endorsed their own national patients’ rights charters (e.g. France, Ireland, United Kingdom), which had patients’ charters at an institutional level (e.g. Austria), where such charters were in preparation (e.g. Sweden) or were patients’ rights incorporated

into different laws with varying specificity concerning patients' rights (e.g. Germany). Since then, some states have set up national patients' charters, while documents in other states have come under critical discussion. A legal framework also has its disadvantages. The first limitation is the restriction of the obligations of the state to individuals living within its jurisdiction. This is at odds with increasing globalization and the transnational aspects of securing health care, e.g. in the European Union. The second limitation is its legalism and emphasis on the individual with highly formalized rules of process and evidence. This process may "decontextualize" and break down citizens' experiences of violations of rights and thereby disempower them. Third, the legal framework may slow down the dynamics of social change. Health rights in health care assessment Some problems are to be expected from the encounter of an egalitarian, rights-based approach with the current utilitarian framework of economic evaluation. This section suggests potential problem areas and strategies for overcoming them. Its speculative nature should be kept in mind, however. Only time will tell to what degree these problems and their solutions will influence the evaluation of health systems in the future. The first problem area relates to the priority problem, that is the recognition of a plurality of dimensions of evaluation. This problem has been discussed in the past between economists on one side and health psychologists and outcomes researchers on the other side. There is continuing dispute about the validity of multidimensional constructs of physical and mental health in a single figure utility. The argument on this issue will gain new motion under a rights-based perspective, this time related to social and political ideas. It may be questioned whether fundamental aspects of health care, such as dignity or non-discrimination, can be traded against less fundamental dimensions such as satisfaction or even be disregarded completely. This may lead to the straightforward rejection of utilitybased approaches of outcome assessment. John Rawls, the principal proponent of egalitarian ethics, suggested the introduction of a "lexical" or hierarchical order (7). This implies that an evaluative dimension comes into play only if those previous to it are either fully matched or do not apply. This leads to the question of which dimensions should be given priority if a hierarchical order of principles is accepted. In analogy to the priority of basic liberties, an equal right to the most extensive basic entitlement to health care compatible with a similar entitlement for others could be favoured. "Efficient" systems can produce unequal access to health care and health inequalities, resulting in a discussion of the trade-off between equity and efficiency. Such social and economic inequalities are accepted in an egalitarian framework only so far as they are to everyone's advantage. Egalitarian ethicists generally give justice priority over efficiency and welfare. They may argue that the priority of liberty and justice over the
 accumulated utilities assures the observation of basic human rights and health rights, e.g. standards of care compatible with human dignity, non-discrimination, participation and the right to seek legal redress against unfair treatment or denial of care. More discussion is needed about the minimum standards of a health care system that have to be met prior to further assessment of, for instance, the efficiency of resource allocation. Independent of these pending issues, it is likely that the assessment of health outcomes in a rights-based context will result in a three-step procedure. The first step is the analysis of the fulfilment of basic health rights (priority of basic liberties). Such basic rights are typically: • respect for the dignity of the person • information on the patient's state of health and options for treatment • access to adequate care • observation of the patient's autonomy • informed consent • free choice • justice and the ability to seek legal redress. In a second step the general states of health or specific health care outcomes for vulnerable population subgroups or individuals are analysed to control for unacceptable inequalities (the priority of justice over efficiency and welfare). These subgroups may be defined by, for example, socioeconomic status, sex, age,

place of residence or ethnicity. The third step is the assessment of aggregated utility-based outcome measures across populations (such as the DALY-based measurement of the burden of disease) and advanced comparative economic evaluations (cost–effectiveness analyses, cost–utility analyses or cost–benefit analyses) to assure allocative efficiency. In short, the traditional economic evaluation of health care may be preceded in the future by a rights-oriented evaluation. Instruments for the standardized assessment of the fulfilment of health rights or patients' rights are rare. Qualitative assessment can be based on participant observation, expert interviews or focus groups. Quantitative assessment may entail the questionnaire-based assessment of the fulfilment of the entitlements of patients' rights documents in populations or patient groups. Health rights have been discussed under their fundamental principles of dignity, non-discrimination, participation and justice, i.e. the possibility to seek legal redress. Instruments that are designed to measure health rights should capture all four aspects in typical health care settings. Patients' rights are more specialized and have been detailed above. Instruments should cover these aspects, but little work has been done on their empirical assessment so far. Subgroup analyses directed towards non-discrimination can be based on a broad array of outcome measures, ranging from life expectancy to utility measures. Implications Demand in the health care market is influenced both by individual preferences and by providers and public health measures. Accountability for health service delivery thus rests not only with economic market theories, but also with aspects of health care legislation, professional conduct, public health, ethics and politics. It is evident that patients' rights and consumers' rights will play increasingly important roles in medical practice and in the health care market in the twenty-first century. Hence, knowledge of (i) theoretical frameworks of ethics and rights and of (ii) strategies for their implementation, is of great importance to health economists when they are regulating or influencing the market. IV - 82 Learning to live with Health Economics Much conceptual and legal work has been done in the context of patients' rights and their advocacy. In the words of the late Jonathan Mann, a human rights analysis has the potential to "disaggregate a seemingly overwhelming problem into many component parts capable of being acted upon" (8). This disaggregation of complex problems, however, requires suitable analytical tools. There is a lack of standardized and validated assessment tools for empirical research on human rights and health. Certain situations require different approaches such as expert interviews, participant observation or focus groups. Moreover, standardized strategies need to be developed to assess health care from a rights-based perspective. Case study: genetic screening for breast cancer11 Scientists from the National Institutes of Health in the United States showed that three specific alterations in the breast cancer genes BRCA1 and BRCA2 are associated with an increased risk of breast, ovarian and prostate cancers. In the largest study to date involving direct testing for these cancer-susceptibility genes in a general population, the researchers found that, on average, women carrying one of the three alterations have a 56% chance of getting breast cancer by the age of 70 (compared with a 13% chance for women without the alterations) and a 16% chance of getting ovarian cancer (compared with 1.6% for non-carriers). The study involved more than 5000 Ashkenazi Jews (those with origins in central and eastern Europe, comprising about 90% of the 6 million Jews in the United States) from the Washington DC metropolitan area. Each of the 5318 volunteers donated a blood sample from a finger-prick and filled out a brief family history of cancer. DNA from the blood samples was tested for three alterations: two in the BRCA1 gene (185delAG and 5382insC) and one in the BRCA2 gene (6174delT). The DNA analysis showed that 120 of the volunteers had one of the three mutations (2.3%). The researchers calculated that only about 7% of the breast cancer in Jewish women is due to

these alterations in BRCA1 and BRCA2. Likewise, the vast majority of breast cancers in non-Jewish women are not due to inherited alterations in these genes. Many of the over 100 alterations in each of the BRCA1 and BRCA2 genes identified in cancer-prone families are unique to a single family. In a few circumstances, identical alterations have been found in multiple families. Besides Ashkenazi Jews, recent studies reported mutations that may be unique to Dutch, Icelandic or Norwegian families. To date, no other ethnic-specific mutation in the United States has been discovered with as high a frequency as the ones specific to Ashkenazi Jews. The frequency (1 in 44) reported in this and other studies is at least several times higher than estimates of all the mutations in BRCA1 and BRCA2 for the general US population. Although volunteers in the study will not receive their individual results, they will, if requested, receive a summary of the overall results of the study. 11 Source:

http://www.nhgri.nih.gov/DIR/GMBB/BRCA/media_release.html (accessed 6 November 2002). The results of the research, which involved a cooperative effort between the Washington, DC, Jewish community and scientists from the National Cancer Institute (NCI) and the National Human Genome Research Institute, were published in the New England journal of medicine of 15 May 1997 (9). Learning to live with Health Economics IV- 83 References 1. MOSSIALOS, E. Citizens’ views on health systems in the 15 member states of the European Union. Health economics, 6(2): 109–116 (1997). 2. Ottawa Charter for Health Promotion. Health promotion, 1(4): iii–v (1986). 3. ANNAS, G. A national bill of patients’ rights. New England journal of medicine, 338(10): 695– 699 (1998). 4. Declaration on the Promotion of Patients’ Rights in Europe, Copenhagen, WHO Regional Office for Europe, 1994. 5. The Ljubljana Charter on Reforming Health Care. Copenhagen, WHO Regional Office for Europe, 1996 (document EUR/ICP/CARE 9401/CN01). 6. World health report 2000: health systems: improving performance. Geneva, World Health Organization, 2000. 7. RAWLS, J. A theory of justice. Cambridge, MA, Harvard University Press, 1971. 8. MANN, J. Human rights and the new public health. Health human rights, 1(3): 229–233 (1995). 9. STRUEWING, J.P. ET AL. The risk of cancer associated with specific mutations of BRCA1 and BRCA2 among Ashkenazi Jews. New England journal of medicine, 336: 1401–1408 (1997). Further reading ANNAS, G. Patients’ rights in managed care – exit, voice and choice. New England journal of medicine, 337(3): 210–215 (1997). BEAUCHAMP, T. & CHILDRESS, J. Principles of biomedical ethics. New York, Oxford University Press, 1994. EUROPEAN NETWORK OF SCIENTIFIC CO-OPERATION ON MEDICINE AND HUMAN RIGHTS. The human rights, ethical and moral dimensions of health care. 120 practical case studies. Strasbourg, Council of Europe Publishing, 1998. FXB CENTER FOR HEALTH AND HUMAN RIGHTS.

Fiftieth Anniversary of the Universal Declaration of Human Rights. Health and human rights, 3(2): 1–189 (1998). ILIEV, D. & VIENONEN, M. Patients’ rights development in Europe. Copenhagen, WHO Regional Office for Europe, 1998. LEARY, V. The rights to health in international human rights law. Health and human rights, 1(1): 24–56 (1994). MANN, J. ET AL. Health and human rights. Health and human rights, 1(1): 6–24 (1994). SALTMAN, R.B. Patient choice and patient empowerment in Northern European health systems: a conceptual framework. International journal of health services, 14: 201–229 (1994). SEN, A. The economics of life and death. Scientific American, 268(5): 40–47 (1993). STARR, P. The social transformation of American medicine. New York, Basic Books, 1982. Chapter V Useful economic tools Learning to live with Health Economics Edited by H. Zöllner, G. Stoddart and C. Selby Smith WHO Regional Office for Europe Copenhagen, 2003 Key Words HEALTH ECONOMICS DELIVERY OF HEALTH CARE – economics HEALTH POLICY – economics SOCIOECONOMIC FACTORS HEALTH SERVICES ACCESSIBILITY HEALTH CARE REFORM COST–BENEFIT ANALYSIS – methods OUTCOME ASSESSMENT

(HEALTH CARE) PROGRAM EVALUATION – methods FORECASTING TEACHING MATERIALS The Regional Office for Europe of the World Health Organization welcomes requests for permission to reproduce or translate its publications, in part or in full. The designations employed and the presentation of the material in this publication do not imply the expression of any opinion whatsoever on the part of the World Health Organization concerning the legal status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. Where the designation "country or area" appears in the headlines of tables, it covers countries, territories, cities, or areas. Dotted lines on maps represent approximate border lines for which there may not yet be full agreement. The mention of specific companies or of certain manufacturers' products does not imply that they are endorsed or recommended by the World Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters. The World Health Organization does not warrant that the information contained in this publication is complete and correct and shall not be liable for any damages incurred as a result of its use. The views expressed by authors or editors do not necessarily represent the decisions or the stated policy of the World Health Organization. EUR/03/5042783 Contents . Learning to live with Health Economics V- 1 5.1 Introduction The final chapter of the learning materials provides modules on four useful tools in the economist's toolkit: health outcome assessment, costing, economic evaluation, and economic modelling and forecasting. These tools are relevant to each of the four main groups of potential users of the learning materials in terms of appreciation and appraisal. They can all benefit from knowing that such tools are available, their strengths and weaknesses, and when their use will be appropriate. However, the most senior users, and many of the concerned public groups, will tend to benefit from knowing they are available; where, when, and how they can best be used; their overall strengths and weaknesses; and the broad thinking which lies behind them; whereas the other two groups of potential users may have greater interest, in addition, in the more detailed aspects. Module 5.2.1, by the late Dr Oliver Sangha and Dr Manfred Wildner from Munich, Germany, is concerned with outcome assessment in health care. This is an important topic, since it is essential to know what consequences follow, or are likely to follow, from specific actions in health care and other health-related systems. For example, scarce resources cannot be allocated efficiently if this information is not available for decision-makers (at all levels). Neither can appropriate decisions be made in relation to the pursuit of equity objectives. In recent years, growing interest has been shown in information about health outcomes by patients, providers, payers and policy-makers, and this seems likely to increase even further in the future. The authors stress that it is important to distinguish

between efficacy, effectiveness and efficiency. There is also an important distinction to be made between process-related non-health dimensions and health outcomes. They recognize that health is a multidimensional construct, that individual and collective health care can be looked at separately, and that health care is only one among a number of determinants of health. They identify six major domains of health outcomes (the six Ds): disease (morbidity), death (mortality), discomfort, disability (limitations in functioning), dollars (costs) and dissatisfaction (preferences and satisfaction with care). Obviously, the appropriate measurement of health status requires the use of standardized instruments with proven psychometric properties, notably validity, reliability and sensitivity. Values are also important and the module argues that the objectives of health outcomes assessment are “based on equity and equality, quality of care, patient’s autonomy and choices and responsiveness to patients”. In their view, the explicit health rights of participants in the health care system, including patients and their carers, will play an increasing role in the future. This matter was discussed further in Module 4.4.2. 5. Useful economic tools V - 2 Learning to live with Health Economics Module 5.2.2, on costing, was prepared by Professor Chris Selby Smith from Monash University in Australia. Since resources are scarce it is not possible to produce all the outputs which would be thought desirable. Thus, choices have to be made; and the cost of alternative courses of action is relevant to much decision-making in health care (consequences also need to be considered). For economists, costs refer to the opportunities foregone elsewhere because the resources are used for this particular purpose. Thus, costs are wider than financial expenditure alone. Other resources especially need to be considered if their opportunity costs are not adequately reflected in market prices. Examples include voluntary contributions; the time costs involved for patients and their carers; and services contributed by religious orders. Total costs are important; they can be viewed from various perspectives, such as the sources or types of costs or distribution of total costs. Changing the distribution of given total costs among the various parties to the complete resource allocation decision can alter the incentives they face and therefore the actions they take. Since the cost information sought by economists is often difficult to obtain, three stages can usefully be distinguished in costing studies: identification, measurement and valuation. Frequently the three stages become progressively more difficult. The module emphasizes that the purpose of collecting and analysing cost estimates is to contribute to improved decision-making. There are many purposes for which cost information is relevant; and the specific cost information required can only be determined by reference to the particular objectives of the decision-maker. While cost information is not the only input required, high quality decision-making is more likely to occur when adequate cost information is available. The module also notes that cost analyses can be undertaken, and cost information presented, in ways which are more or less helpful for decision-makers. Module 5.3.1, on economic evaluation in health and health care (both in theory and practice), was prepared by Professor Michael Drummond of York University in the United Kingdom. Increasing pressures on health care budgets have led decision-makers throughout the European Region of WHO to search for methods of assessing the value for money from different health care treatments and programmes. In economic evaluation, programmes are compared in terms of their costs and their consequences, such as improvements in health outcomes and savings in health care resources. There are various forms of economic evaluation, such as cost-minimization analysis, cost–effectiveness analysis, cost–benefit analysis and cost–utility analysis. All of them include an analysis of costs, which underlines the significance of the factors considered in the previous module. It is important for all groups of potential users of these learning materials to understand the key methodological principles that are involved in economic evaluation approaches and to appreciate how they are applied (or misapplied) in the specific studies with

which they are concerned. These principles include the consideration of an adequate range of alternatives, the use of good evidence of effectiveness, and allowance for uncertainty in the estimates of costs and benefits. The module includes a helpful checklist of matters to take into account when appraising an economic evaluation (or considering whether one should be undertaken). Economic evaluations have a range of uses in health care and related activities. For example, they can be used, generally in association with other policies, to encourage a rational diffusion and use of health technologies, including planning of specialist facilities, reforming payment schemes for institutions or health care professionals, and developing health care practice guidelines. Economic evaluations can also be used to assess health-producing measures in different sectors of the economy, including road safety, environmental protection and occupational health. For many of the potential users of these learning materials the way of thinking is likely to be at least as valuable as the Learning to live with Health Economics V- 3 detailed arguments about costs and benefits, risk and uncertainty, and the distributional implications of the alternatives being compared. However, the way in which studies are conducted and reported can contribute to making them more or less useful for decision-makers elsewhere (e.g. reporting prices and quantities separately rather than only total expenditure). Module 5.4.1, by Professor Reiner Leidl of the University of Ulm in Germany, considers economic modelling and forecasting. Economic models are a useful tool for the support of decision-making and policy development, since transparent models can structure problems, make explicit the assumptions used, and explore the consequences implied by particular decisions. Explanation, prediction and simulation are the main general purposes of economic models. The module contains a table which lists eight points to be checked by decision-makers who are considering modelling approaches. They are important since models are tools that have to be implemented properly and used adequately: “methodological expertise, expertise in the health problem investigated, and expertise in how to support decisions by model results is required.” However, so long as these preconditions are met, models can significantly improve the available information and support decision-making in a transparent and rational way. The remainder of the module, recognizing that there are many different problems and many different types of model, considers three major approaches: a decision tree model, scenario analysis and disease modelling, and econometric models. This module is potentially valuable for each group of users envisaged for the learning materials, but detailed knowledge of the various approaches is likely to be particularly relevant to managers and health professionals. The most senior decisionmakers and members of the various concerned groups are more likely to want to know that they are available, their strengths and weaknesses, where they are likely to be useful and how they can be appropriately incorporated into wider decision-making processes. In this sense the module is typical of many others included in these learning materials. V - 4 Learning to live with Health Economics Learning to live with Health Economics V- 5 5.2.1 Outcome assessment in health care Oliver Sangha and Manfred Wildner1 Key messages • In recent years, there has been an increasing interest in information about health outcomes from patients, providers, payers and policy-makers. • The goal of health care is to protect, promote and preserve people’s health. This requires standardized assessment of both organ morphology and function, as well as health status. • To understand the concepts of health outcomes assessment, it is important to distinguish between efficacy, effectiveness and efficiency. The distinction between process-related non-health dimensions and health outcomes is also important. • Moreover, it is important to recognize that health is a multidimensional construct, that individual and collective health can be looked at separately, and that health care is but one of many determinants of health. • The objectives of health outcomes assessment are

based on equity and equality, quality of care, patients' autonomy and choices, and responsiveness to patients. Observation of explicit health rights is likely to play an increasing role in the future. • The main domains of health outcomes include the six Ds: disease (morbidity), death (mortality), discomfort, disability (limitations in functioning), dollars (costs), and dissatisfaction (preferences and satisfaction with care). • Measurement of health status requires the use of standardized instruments with proven psychometric properties (validity, reliability, sensitivity). Tutors' notes This module introduces a valuable skill set which can be useful for all four groups of potential users of the learning materials. The economic way of thinking requires consideration of costs in relation to benefits for alternative courses of action by decision-makers at all levels of the health care system, and 5.2 Outputs and inputs 1 This module was prepared by Dr Manfred Wildner of the Bavarian Public Health Research Centre, LM University of Munich, Germany (e-mail : wil@ibe.med.uni-muenchen.de) and the late Dr Oliver Sangha, former Head of Research Unit at the Centre. V - 6 Learning to live with Health Economics in related areas which affect health. This cannot be achieved without attention to the consequences, beneficial or adverse, from health interventions or their absence. Similarly, consideration of equity aspects of health care, health and wellbeing require that there be at least some broad attention to measures of the relevant outcomes. The module provides a valuable introduction to this topic, including discussion of: • the conceptual framework and theoretical concepts • the objectives for which health outcome assessment is undertaken • various methods and instruments of health outcome assessment • criteria for choosing particular instruments. The different groups of potential users of the learning materials could use the module in their separate groups. If so, the senior political and bureaucratic participants, and the members of the various concerned public groups, are likely to want a more general approach, while the other two groups may prefer a more detailed discussion. However, the module could also be used with participants who cross the boundaries of the different user groups, either in real life or by assuming roles in the context of the learning experience. The first exercise is aimed at the level of appreciation. It can be used with separate (or mixed) groups of: • policy-makers at the senior political and bureaucratic levels in health and health-related agencies; • civil servants, other government staff in health or other agencies, and similar people in bodies such as nongovernmental organizations providing relevant services and voluntary, religious and charitable organizations; • managers of health care facilities, such as hospitals, facilities for care of the elderly or community health centres, and managers in other health and health-related organizations; • health care professionals, such as doctors, nurses, dentists, pharmacists or therapists; • a wide range of other concerned public groups. The second exercise is aimed at the level of appraisal. It can be
6 used with a similarly broad range of potential users of the learning materials. It can be valuable for senior political and bureaucratic participants, and for the members of concerned public groups. However, managers, health care professionals and patients may be most interested in the details of where health outcome measurement can be usefully undertaken, how it can best be done and what implications it has. The former two groups of users may be especially concerned with how health outcome measurement relates to providing improved health for groups, whereas the latter two groups may be more focused on outcomes for particular individuals or small groups (e.g. their families or their patients). Introduction The purpose of this module is to provide an analytical exposé of different methodologies of assessing the health outcome of health care systems. In order to do so, the module offers background in two areas: firstly, it provides a brief analysis of theoretical concepts, which are important for the understanding of the relationship between health care and health outcomes. Secondly, it analyses the interrelationship between the broad objectives of health care provision and the patients' perspective. In recent years, there has been

growing interest in information about health outcomes for several reasons. Patients demand information to make informed decisions about their own care or the care of Learning to live with Health Economics V- 7 their relatives. Health care providers are being made more and more accountable for what happens to patients. Doctors and hospitals are shifting their care towards evidence-based medicine with reliable data on efficacy and effectiveness of care. Finally, payers and policy-makers need to base their decisions about health care provision, insurance coverage and benefit planning on information about how policies might influence the health outcomes of individual patients and populations. The goal of health care is to protect, promote and preserve people's health. This requires standardized assessment of both organ morphology and function as well as health status. Traditionally, measures of success or failures of health have addressed the four Ds – death, disease, disability and discomfort (1). In particular, mortality and morbidity data have been widely used because they were most accessible from medical records, hospital databases or governmental sources. While mortality rates, life expectancy or the prevalence of disease provide significant inferences on population health, they say little about any other point on the continuum of dysfunction between perfect health and death or on individual health. In recent years, a wide body of research has enabled sophisticated measurement of health status. Moreover, White's four Ds have been expanded by two additional Ds: dissatisfaction and dollars, to address patients' satisfaction and the efficiency of health care. Furthermore, the fulfilment of patients' rights, with respect to health care, has become more important in the global discussion of health outcomes. Before the reader is introduced to selected methods and instruments of outcome assessment, we will provide a brief introduction to the theoretical concepts and objectives of health outcomes assessment. Theoretical concepts Definition of health Good health is assigned the highest value in most societies. Definition of health as an operational and thus measurable concept has, however, been elusive. From antiquity health has been thought as a physical or mental state with assessments focusing on the presence or absence of diseases. Departing from prior definitions, Henry Siegerist stated in 1941, "… health is therefore not simply the absence of disease: it is something positive …" (2). Building on Siegerist's definition, WHO's Constitution stated in 1947, "Health is a state of complete physical and social wellbeing, and not merely the absence of disease or infirmity" (3). Since then, health status has incorporated measures of the physical, mental and social functioning of individuals. In 1977, the World Health Assembly decided that the main social goal of governments and the World Health Organization should be the attainment by all citizens of the world by the year 2000 of a level of health that would permit them to lead a socially and economically productive life ("health for all"). Conceptual framework of health outcomes Modelling is the basis for understanding health outcomes. All models of health outcomes are principally based on the WHO definition of health. WHO compares the aetiology and processes (pathology) of illnesses with the following three levels of disease consequences. Impairment is defined as any loss or abnormality of psychological, physiological or anatomical structure or function. It refers to the V - 8 Learning to live with Health Economics level of an individual or organ system. Altered organ morphology or "damage" may cause organ dysfunction. Impairment is concerned with abnormalities of body structure and appearance and with organ or system function resulting from any cause. Disability is the physical and psychological functional limitation caused by an impairment which is described by an individual when there is a discrepancy between his or her capacity and an actual or perceived need for a specific function. Handicaps reflect the effects of disability, and of adaptations to it, on an individual's ability to perform social roles (e.g. work, parenthood) and thus the degree of social disadvantage conferred by the disability. Although "outcome" is often used in a simple and global fashion, it is

actually a complex construct composed of several independent dimensions. Hence, the use of “outcomes” in the plural form is intended to reflect the multidimensional nature of the term. Monitoring of health care systems Health outcomes can also be used to monitor health care systems. Health care systems have been described as all people and all activities whose primary purpose is to improve health. These systems may be formally integrated and centrally directed, or may consist of a multitude of particular services directed at promoting, restoring or maintaining health. Assessment of the quality of these services may be directed towards their structure, processes and outcomes. Evaluation of the performance of health care systems therefore takes account of measures of process and structure, such as responsiveness and fairness of financial contributions, in addition to health outcomes. Responsiveness relates to the non-health aspects and reflects the ability of the system to respond to all patients’ needs swiftly. Fair financial contributions relate to the financial risks of households which should be distributed according to ability to pay and not according to the risk of illness or disability. As diverse as the activities of health care systems are regarding structure and process, their common outcome is “producing health”. Thus it may seem straightforward to monitor health care systems by assessing the overall health state, but it must be noted that: • health is a multidimensional construct • individual and collective health can be looked at separately, and • health care is but one of many determinants of health. The implications of the idea that health is a multidimensional construct have been detailed above. The necessity of a distinction between individual and collective health can be illustrated by the paradoxical fact that high quality health care may improve health at the individual level, while it increases at the same time the disease burden at the population level due to prolonged life in a less than perfect health state. While the individual may appreciate his or her health gain, the collective is experiencing an increase in prevalent disease – and vice versa. Moreover, the population’s health may under certain circumstances improve at the expense of, or with disregard to, the needs of a minority within the population whose health status is deteriorating. These circumstances may be the consequence of, for example, rationing expensive services such as dialysis or transplantations. Finally the fact that health is a “byproduct” of a number of activities and determinants must be considered. Examples of such diverse determinants are: the higher rate of cardiac death rates in a cold climate; the interaction between sanitation, climate and vector control; the influence of body height on fall-related deaths; cultural norms regarding food composition and the availability of healthy food; the influence of general education levels; population density and the geographical dispersion of health care infrastructure; the inverse association of road traffic death rates with increasing motor vehicle density; and
6 the influence of legislation such as seat belt laws or speed limits and safety engineering standards. Learning to live with Health Economics V- 9 In short, a distinction between process-related non-health dimensions and health outcomes is necessary. As regards health status, a multidimensional assessment should be performed, the absolute health status must be distinguished from the relative health gain related to health care system activities, and the health of individuals likewise distinguished from the health of populations. Exercise 1 Discuss the ways in which resources are distributed to competing health care programmes in your country. Assuming that each programme should yield clearly defined benefits, elaborate on how you would define and measure health benefits (outcomes). Each participant may choose a specific perspective (e.g. patient, provider, payer, policy-maker). Objectives of health outcomes assessment Efficacy, effectiveness and efficiency Health outcomes are primarily used in the contexts of efficacy, effectiveness and efficiency. Efficacy is the ability of an activity to achieve its goal under ideal or laboratory conditions. An example would be the successful transplantation of cartilage cells into defects on the surface of a joint in a

specialized centre. This proven efficacy does not, however, guarantee the success of this procedure when it is performed by less specialized surgeons as part of their routine. Effectiveness hence describes the performance of a health care activity under conditions of “normal” health care. To go back to our example, the transplantation of cartilage cells may also be effective under these conditions when the surgeon is specially trained and increasingly skilful. However, this requires the allocation of specialized personnel, time in the operating theatre and the availability of tissue cultures. Efficiency therefore puts the health gain of an activity in perspective against the resources spent, which could also have been used for an alternative health activity: the patient could have had intensive physiotherapy instead and a knee replacement in the case of persistent problems. It is important to note that the outcome measure for efficacy and effectiveness can be either traditional physician-centred clinical measures, for example a reduction in pain or improvement in functions such as the range of motion of a joint or multidimensional, or patient-centred health outcomes. Efficiency measures and values the costs for a certain health gain, e.g. the costs for each knee replacement avoided. If a cost–effectiveness analysis comparing alternative measures is planned, care must be taken that the same dimension of effectiveness is assessed for the concurrent measures. Efficacy, effectiveness and efficiency relate primarily to natural units of success as they are understood in clinical practice, e.g. reduction of pain or improvement in function. This is different from the approach of calculating so-called “utilities”, a unifying concept for measuring health outcome for advanced economic analyses, which allows the comparison of the outcomes of very different diseases and treatments. Quality of care Assessment of the outcome of hospital treatment – mainly survival – has been the historical basis of current approaches to assure the quality of care. Quality management requires the feedback of meaningful outcome information into the assessment component of a “plan–do–check–assess” cycle. Such meaningful information may be simple survival information, for example following major surgery, or information on complication or adverse event rates such as for maternity services or immunization V - 10 Learning to live with Health Economics programmes. It may also be comprehensive information on multidimensional health status assessment, e.g. in phase 3 and phase 4 trials of new drugs or in the management of chronic diseases. It has been demonstrated that a patient-centred approach to health outcomes assessment supplements the clinicianbased assessment with important and at times very different outcomes information. Quality of care is ultimately determined by the patient’s experience of improvement in the state of his or her illness and functional limitation. Modern multidimensional outcome measures are patient-centred and capture the patients’ perspective well. Responsiveness has been added more recently to the assessment of health systems. Responsiveness relates to non-health aspects of the provision of preventive services, care or nonpersonal services. It includes respect for the dignity of the person, confidentiality, autonomy to decide on treatment options, prompt attention, quality of the amenities (e.g. cleanliness, space, food), access to social support networks and free choice of providers. Hence rudeness in relation to patients, long waiting times, denial of access to care, unnecessary isolation or insensitivity to cultural values of connectedness, denial of choice and gag clauses in managed care systems all reflect poor responsiveness on the part of health care systems. Poor responsiveness may result in poor take-up of preventive services or treatment options. As responsiveness also reflects expectations, its assessment may vary with, for instance, the education level or socioeconomic status of the assessor. Moreover health systems often consist of compartments, for example defined by remuneration for services, so that their perceived responsiveness may be as heterogeneous as the system. Some aspects of responsiveness, e.g. long waiting lists for surgery, are captured by health

outcomes such as survival or quality of life. Other aspects, for instance respect for the dignity of the person need a special assessment, e.g. by satisfaction questionnaires or expert interviews. Methods and instruments of health outcome assessment Morbidity and mortality Perhaps the most basic outcome measure of health care is death. The death rate of newborn babies (neonatal mortality rate) or of children under five years (infant mortality rate) and the maternal mortality rate are established indicators for the quality of a health system's performance. Other indicators are the standardized overall mortality rate within a population or the average life expectancy at birth. The influence of factors unrelated to health care on these measures has been pointed out earlier. The survival time is often an important outcome indicator following major therapeutic interventions, e.g. organ transplantations. Another approach to death as an outcome measure is to count the potential years of life lost and add them up for a population (setting an upper age limit). The total amount of potential years of life lost thus depends on the average loss of life years and on the frequency of these deaths in a population. Alternatively, the further life expectancy can be calculated from population-specific period life tables (period-expected years of life lost), from a cohort life table (cohort-expected years of life lost) or from an ideal standard (standard-expected years of life lost). However, the consequences of many diseases are not adequately captured by focusing on reduced life expectancy. In particular, chronic diseases such as asthma, diabetes or rheumatism may have no significant influence on life expectancy while being a considerable burden to both the individual patient and the health care system. Traditionally, morbidity is captured by the physician as anatomical or physiological impairment: e.g. as a reduced forced expiratory volume, a reduced glucose tolerance or range of joint motion. If this impairment is experienced by the patient as functional limitation it is Learning to live with Health Economics V- 11 called disability, e.g. the inability to run fast, stay without food for extended periods or do manual labour. If this disability interferes with the social role, e.g. the profession, a handicap is present. Due to their heterogeneity, organ-based clinical morbidity measures by and large have a narrow application in the context of the management of specific diseases. An early attempt to capture non-fatal health outcomes more generally was the development of quality-adjusted life years (QALY). This method assigns weights between 1.0 (perfect health) and 0.0 (near death) to various health states, and sums up the QALYs by multiplying the time spent in each state by the respective weight. Frequently an additional age-weighting is used giving lower weights to years of old age. Murray et al. have promoted the concept of disability-adjusted life years (DALY) as a unifying concept to quantify the burden of disease within populations (4). The focus on disability rather than the socially constructed handicap should ensure comparability of like conditions. This time-based health 6 status measure aims to capture both loss of life years and loss of quality of life years, incorporating non-fatal health outcomes. Moreover, it aims to provide a unifying measure for cost–effectiveness analyses. Twenty-two indicator diagnoses were selected as a reference for the calculation of utilities, which are discounted for future life years in accordance with economic theory. An age-weighting gives highest weights to years of young adult age. A discussion of the necessary characteristics of a measure to qualify as a utility – utility independence, constant proportional tradeoff and risk neutrality – goes beyond the scope of this introductory text. Health status and health-related quality of life Generally accepted dimensions of health status include physical, social, and emotional functioning. Two classes of measure can be used to assess health outcomes: generic measures and conditionspecific measures. Among generic instruments, a further distinction is made between health profile and utility measures. Health profile measures are instruments that intend to measure all important aspects of health status or health-related quality of life. Utility measures are derived from economic and decision theory. They reflect patients' preferences for different

health states. The chief element of utility measures are that they integrate utility measures and relate health states to death. The results from utility measures are frequently used as outcomes in cost–utility analysis. In accordance with the WHO definition of health, generic health status instruments measure multiple aspects of health, including physical function, social function and pain. They are suitable for comparing health status across multiple diseases or the value of competing clinical programmes. Generic health status instruments are useful in the evaluation of subjects with multiple chronic conditions, since they can detect changes arising from different organ systems. This is of particular interest when interventions can have (adverse) effects on several organ systems. Widely used representatives of generic health status measures include the Sickness Impact Profile (SIP), the Quality of Well-Being Index (QWB), the Nottingham Health Profile (NHP), the WHO Quality of Life Assessment (WHOQoL), the EuroQol (EQ)-5D, the Health Utilities Index (HUI) and the Short-Form 36 (SF-36). The Sickness Impact Profile (SIP) (5) is a widely used general health status instrument containing 136 items answered true or false. Scores use predetermined weights based on rater panel estimates of relative severity of the dysfunction. The categories of ambulation, body care and mobility are aggregated into a physical dimension, and the four categories of emotional behaviour, social interaction, alertness behaviour and communication are aggregated into a psychosocial dimension. The remaining categories are work, sleep and rest, eating, home management, and recreation and pastimes. V - 12 Learning to live with Health Economics The Quality of Well-Being Index (QWB), and an earlier version the Index of Well-Being (6), assess mobility, physical activity and social activity. An interviewer asks what the patient did because of illness during the previous six days. Scoring for particular functions is based on preference weights derived from the normal population. The Nottingham Health Profile (NHP) (7), and its predecessor the Nottingham Health Index (NHI) (8), assess perceived physical, social and emotional health with 38 items answered yes/no. It uses weighted scores from panels' judgments about the severity of individual items. The NHP covers physical mobility, pain, emotional reaction, energy level, sleep and social isolation, and can provide dimension-specific scores. The WHO Quality of Life Assessment (WHOQOL)-100 (9) contains 100 questions over six broad domains of quality of life within which 24 facets are covered. The six domains include physical health, psychological health, level of independence, social relationships, environment, and spirituality/ religion/personal beliefs. Four items are included for each facet, as well as four general items covering subjective overall quality of life and health, producing a total of 100 items in the assessment. There are many international translations including in Croatian, Dutch, English, French, German, Hebrew, Hindi, Italian, Japanese, Russian, Shona, Spanish, Tamil and Thai. The WHOQoL-BREF contains 26 items, 2 from the Overall Quality of Life and General Health, and 1 item from each of the remaining 24 facets included in the WHOQOL-100. The WHOQoLBREF is scored over four major domains: physical, psychological, social relationships and environment. The EuroQoL (EQ)-5D (10) is a measure of health status for use in evaluating health and health care. It provides a simple descriptive profile and generates a single index value for health status on which full health is assigned a value of 1 and death a value of 0. EQ-5D has been especially designed to complement other health status measures such as the SF-36, NHP, SIP or condition-specific measures. The EQ-5D covers the following five domains: mobility, self-care, usual activities, pain/discomfort and anxiety/depression. By combining different levels from each domain, the EQ-5D defines a total of 243 health states. These may be converted to a score using sets of values derived from general population samples. The EQ-5D has been translated into several languages including Afrikaans, Catalan, Croatian, Czech, Danish, Dutch, English, Finnish, French, German, Hungarian, Italian, Japanese,

Norwegian, Polish, Portuguese, Spanish, Swedish and Turkish. The Health Utilities Index (HUI) (11,12) is a system for measuring health status and healthrelated quality of life, and producing utility scores. It is generic, preference-scored and comprehensive, based on an explicit conceptual framework of health status and health-related quality of life. Applications of the HUI require that data be collected to classify the health status of each subject at a point in time, relying on self-completed or interviewer-administered instruments in either self-assessment or proxyassessment formats. The HUI documentation includes a health status classification system and formula for calculating (single and multi-attribute) utility scores, which in the Mark 3 version of HUI define 972 000 unique health states (by comparison, Mark 2 describes 24 000 states) that are based on eight attributes (vision, hearing, speech, ambulation, dexterity, emotion, cognition and pain) with five to six levels each. By the end of 2000, over 300 investigators had used HUI in a wide variety of studies in over 20 countries worldwide, and more than 200 000 subjects had been assessed using HUI. Learning to live with Health Economics V- 13 The Medical Outcome Study Short Form 36 (SF-36) (13) comes from a larger battery of questions administered in the Medical Outcomes Study. The SF-36 includes eight multi-item scales containing 2 to 10 items each and a single item to assess health transition. The scales cover the dimensions of physical health, mental health, social functioning, role functioning, general health and vitality. Forms cover a week or a month. The use of subscales is encouraged and it can be selfadministered or interviewer-administered. The SF-36 is the most widely used general health status instrument and has been translated in many languages. The SF-36 allows scoring of the eight subscales and the construction of two summary scales: the physical component summary and the mental component summary scales. Further evaluation of these two summary scales provided the foundation for the construction of an instrument that is much shorter than the SF-36 (14). This short form, the SF-12, uses 12 items from the SF-36, and demonstrates satisfactory reproducibility of the physical and mental component summary scales. The SF-12 is likely to perform well enough for monitoring general populations; it does not, however, allow for the scoring of individual SF-36 subscales such as bodily pain or social functioning. Disease-specific instruments are useful for measuring clinically important changes in response to treatments. Since these instruments include elements most relevant to a particular disease, they are usually more sensitive to subtle improvements in health status. Disease-specific instruments are available for many different diseases and afflictions. There are principally two types of condition-specific measure: (i) measures that focus on clinical signs, symptoms and tests, and (ii) measures that capture the impact of the disease or problem on the patient. A comprehensive collection of condition-specific health status

measures can be found in the literature (15–18) or on the internet (http://www.leeds.ac.uk/nuffield/infoservices/UKCH/home.html, accessed 6 November 2002). Measurement of satisfaction with health care Over the past decade, the legitimacy of patients' satisfaction as an outcome measure of health care has grown considerably. In the main, patients' satisfaction is considered an indicator of quality of care. Moreover, satisfaction is used to assess the performance of health care delivery at multiple levels, e.g. health system, organizational (hospital, health maintenance organization, outpatient clinic, etc.), service unit (laboratory, radiology, etc.) and individual (physician, nurse, therapist, etc.). Empirical research on patients' satisfaction has demonstrated various problems, including: (i) a lack of conceptual or theoretical models of the determinants of patients' satisfaction, (ii) methodological challenges and a lack of standardized approaches to assessment, (iii) few studies that compare care across settings, and (iv) a lack of consensus within the medical profession and policy-makers about what role patients' satisfaction should play. Patients' satisfaction can address multiple aspects of care. The dimensions that are most frequently

assessed include: • interpersonal aspects of care (the way patients feel about those caring for them) • accessibility, availability and convenience of care • continuity of care • physical setting • technical quality of care • efficacy • financial considerations (costs). V - 14 Learning to live with Health Economics The results of evaluations of patients' satisfaction depend on the measurement method selected (e.g. surveys, interviews, focus groups). Contrasting opinions have been expressed regarding appropriate measures of patients' satisfaction. Although few measures exist, comparative analyses of different methods/instruments to validate these measures are rare. Economic outcomes Economic outcomes cannot easily be reduced to expenditure on health interventions at different levels of care provision. On the other hand, such figures are most frequently used since they are readily available from provider, payer or governmental sources. In the past, utilization of health services has been used as a proxy of health status. However, it is difficult to interpret as a measure of health because of differences in access to care and other factors related to the population's utilization of health services. Cultural and economic factors in the population of interest may further distort the relationship between health and utilization information. Economic outcomes, whether they reflect the monetary value of a health consequence or integrated measures of health status and patients' preferences (e.g. quality-adjusted life years), are the centrepiece of different methods of economic evaluations. All methods of economic evaluation have in common that they examine one or more possible interventions and compare the resources necessary to carry out such interventions (input) with their consequences or effects (output). The various methods of economic evaluation – cost-minimization analysis, cost–effectiveness analysis, cost–utility analysis and cost–benefit analysis – differ in the way they itemize and value inputs and consequences. Although they all value the inputs and consequences following the same approach – (i) identifying inputs and consequences, (ii) measuring them using appropriate physical units, and (iii) valuing them – difficulties can be encountered throughout the three phases. Some health care interventions have hidden or unknown costs. Not all inputs and consequences can be evaluated in appropriate physical units (e.g. some interventions have intangible consequences, such as pain reduction or improvement in physical function). Valuing inputs and consequences is the most difficult aspect of conducting economic evaluations. This is because the only readily available measures of value, prices, exist only in true markets, and these cover only a minority of health inputs and consequences. Choosing outcome instruments In general, only instruments with demonstrated psychometric properties which have been published should be used. The attributes of any quantitative measure are validity, reliability, responsiveness and practical usefulness. Validity refers to whether an instrument measures what is supposed to measure. Ideally, a measure would be compared with a standard, for example, comparing a suspicious nodule on a chest X-ray with a biopsy showing cancer (criterion validity). For health status no reference or standard exists to judge the validity of a particular instrument. Instead, an assessment is made of the extent to which a measure is consistent with a theoretical concept (construct) concerning the phenomenon of interest (construct validity). Face validity (it "looks like" it measures what it intends to measure) and content validity (it represents the domain of interest) are other techniques to strengthen the validity of a construct. Learning to live with Health Economics V- 15 Reliability is the extent to which a measurement yields the same result on repeated administration of the questionnaire under the same circumstances (reproducibility). If scores of a health status instrument have little random error, they are considered reliable. Validity and reliability are the minimal criteria to differentiate individuals at one point in time. However, when used to evaluate changes over time, an instrument needs to be able to capture clinically meaningful changes. Sensitivity denotes the

capacity of a measure to show any change whether it is meaningful or not. Responsiveness, on the other hand, is the capacity to show a change that is clinically meaningful to the patient and/or the physician. The responsiveness of a measure is the criterion which ultimately determines the usefulness of any outcome measure in the evaluation of chronic conditions, but it is the measurement criterion least established for health status instruments. Finally, the practical utility of a health status instrument needs to be assessed for a given setting. In practice and research applications, the time needed to complete a questionnaire should be no more than 10–15 minutes to ensure compliance. In general, self-administered questionnaires are more practical than instruments requiring a trained interviewer. However, in multicultural populations, or where literacy levels are variable, a standardized interview might be the only way to obtain reliable information. Strictly speaking, the validity and reliability of an instrument are characteristics of the instrument for a specific population and should be re-evaluated for a new population. This may not always be possible, but at the least, individual items should be inspected carefully to evaluate face validity and to make sure that all relevant outcomes and potential adverse consequences are included. The scale should cover the range of severity and the magnitude of the changes expected. A small pilot on individuals who are representative of those to be studied can be extremely informative. Exercise 2 Imagine that you are asked to evaluate the effects of a defined health policy intervention (e.g. the implementation of a general health examination at the age of 40 years covered by health insurance). Define relevant outcome measures on the patient, provider and policy-maker level that would allow you to judge whether such an intervention is beneficial or not. Try to implement an evaluation strategy that will allow you to make inferences on short- and long-term effects. The “costs” and “benefits” of health outcomes assessment One of the principal tasks of health policy-makers is to decide how to translate health expenditure into more benefits. Increasingly decision-makers ask that every additional expenditure be justified according to expected outcomes. On the other hand, most countries have barely applied explicit criteria to establish a standardized set of health outcome measures and a methodology of assessment. Outcomes assessment on a broader level using morbidity and mortality – although frequently available from national data sources – are often insensitive to measure the effects of certain health interventions, particularly of those that target improvements in physical, mental and social functioning. In contrast, measures capturing multiple domains of health, such as generic or condition-specific measures, require substantial resources when applied on a larger scale. This has definitely held back a broad dissemination of such V - 16 Learning to live with Health Economics measures. Moreover, until now, there has not been much empirical evidence on the true 6 benefit of using population health status information in health policy decision-making. However, this will change when more data become available. Several countries have introduced measures of health status (such as the SF-36 or SF-12) into national or regional population-based health surveys, and an increasing number of health care providers are implementing patient-centred outcome measures to monitor the health of their patients. Most multidimensional health status measures allow different modes of analysis, for example assessments on the level of health-related domains or an aggregation to global scores that reflect physical or mental health. Aggregated measures, however, may hide the underlying reality (e.g. defined aspects of health which have been targeted by a particular action). Hence, the selection of an outcome measure should be based on a clear sense of what it is anticipated will be measured and why. Outcome measures can be both generic and specific to a given problem. The generic measures are useful for looking at policy issues or reflecting the bottom effects of care on health status or aspects of quality of life. Assessment of health status and patient-centred outcomes – on an individual or on a population level – is a

continuous effort. Some outcomes (for example satisfaction with care) are very sensitive to policy actions, while others require time to achieve substantial changes (such as physical functioning). Since most health status and quality of life measures reflect a defined “time window” (e.g. the past month), it is necessary to implement several measurements to monitor the effect of a particular intervention. This is truly impractical on a population level (e.g. employing large-scale surveys), but manageable on the provider level. The challenge would be to aggregate this information into large databases to make it useful to policy and decision-makers. Once health status information is available, it is necessary to guide potential users in interpreting it. Stratified analysis should allow a closer look at particular groups of the population, and graphical displays may be a useful tool in monitoring longitudinal data and the achievement of predefined health status targets. Users should also be educated in the magnitude of changes in health status that might be achieved by certain actions. While a 5% improvement in physical functioning might sound small for the individual, it is a substantial change on the population level. Implications In order to assess outcomes in health care it is necessary to make a distinction between process-related non-health dimensions and health outcomes. To assess health status, a multidimensional assessment should be performed, the absolute health status must be distinguished from the relative health gain related to health care system activities, and the health of individuals likewise distinguished from the health of populations. Generally, measurement instruments for both health and non-health outcomes should be standardized, reliable, valid and responsive. Health status and quality of life outcomes should become commonplace in the measurement of benefits from health expenditure and in the assessment of the structure and process of health care delivery. Learning to live with Health Economics V- 17 References 1. WHITE, K.L. ET AL. The ecology of medical care. New England journal of medicine, 265: 885– 892 (1961). 2. SIEGERIST, H.E. Medicine and human welfare. New Haven, Yale University Press, 1941. 3. Constitution of the World Health Organization, Geneva, World Health Organization, 1985. 4. MURRAY, C.J.L. & LOPEZ, A.D. The global burden of disease. Boston, Harvard School of Public Health, 1996. 5. BERGNER, M. ET AL. The Sickness Impact Profile: validation of a health status measure. Medical care, 14: 57–67 (1976). 6. KAPLAN, R.M. ET AL. Health status: types of validity for an index of well-being. Health services research, 1: 478–507 (1976). 7. MCDOWELL, I.M. ET AL. A method for self-assessment of disability before and after hip replacement operations. British medical journal, 2: 857–859 (1978). 8. HUNT, S.M. ET AL. Measuring health status: a new tool for clinicians and epidemiologists. Journal of the Royal College of General Practitioners, 35: 185–188 (1985). 9. WHO QUALITY OF LIFE GROUP. The World Health Organization quality of life assessment (WHOQoL): development and general psychometric properties. Social science & medicine, 46: 1569–1585 (1998). 10. CHARRO, F.T.D. & RABIN, R. EQ-5D from the EuroQol Group: an update. Quality of life newsletter, 22: 3–4 (1999). 11. FEENY, D. ET AL. The Health Utilities Index: an update. Quality of life newsletter, 22: 8–9 (1999) (reproduced in http://www.healthutilities.com/update.htm, accessed 2 December 2002). 12. TORRANCE, G.W. ET AL. Multi-attribute utility function for a comprehensive health status classification system: Health Utilities Index Mark 2. Medical care, 34(7): 702–722 (1996). 13. WARE, J.E. JR. & SHERBOURNE, C.D. The MOS 36-item short-form health survey (SF-36). A. conceptual framework and item selection. Medical care, 30: 473–483 (1992). 14. WARE, J.E. ET AL. SF-12: How to score the SF-12 Physical and Mental Health Summary Scales. Boston, MA, The Health Institute, New England Medical Center, 1995. 15. BOWLING, A. Measuring health: a review of quality of life measurement scales. Milton Keynes, Open University Press, 1991. 16. BOWLING, A. Measuring disease. Milton Keynes, Open University Press, 1995. 17. MCDOWELL, I.M. &

NEWELL, C. Measuring health: a guide to rating scales and questionnaires. Oxford, Oxford University Press, 1996. 18. SPILKER, B. Quality of life and pharmacoeconomics in clinical trials. Philadelphia, New York, Lippincott-Raven, 1996. Further reading GOLD, M.R. ET AL. Cost–effectiveness in health and medicine. New York, Oxford University Press, 1996. V - 18 Learning to live with Health Economics 5.2.2 Costing2 Chris Selby Smith3 Key messages • Costs refer to the benefits that are sacrificed elsewhere (foregone) when a given resource is used in the health care system. Resources have alternative uses: if they are not used in health care they could generate benefits elsewhere, for example in education, housing or the environment. • Costs are wider than financial expenditure alone. Other resources especially need to be considered if their opportunity costs are not adequately reflected in market prices. Examples include voluntary contributions, the time costs involved for patients and their carers, and services contributed by religious orders. • The total costs for a given health care activity should be compared with the benefits generated, to ensure that reallocation could not result in an increase in the total benefits achieved by society from the limited resources that are available. Thus, total costs must be estimated as accurately as possible. • Total costs can be viewed from various perspectives. For example, different types of cost could be identified, such as the cost of staff compared to the cost of facilities, capital compared to recurrent costs, direct compared to indirect costs. Costs can be separated by reference to the sources from which they are met. They can also be distinguished by their timing and their level of uncertainty. • Changing the distribution of the total costs for a given health care activity among the various parties to the complete resource allocation decision can alter the incentives they face and therefore the actions they take. • The cost information that is, ideally, required by economists can be difficult to obtain. Three stages are often distinguished in costing studies: identification, measurement and valuation. Frequently the three stages are found to be progressively more difficult. As far as possible the approaches followed at each stage should be consistent in different studies, to facilitate comparisons and longer term learning. • Cost information can be presented in ways which are more or less helpful for decision-makers. In general, cost information is not an end in itself but an aid to improved decision-making, better use of scarce resources in health care and improved outcomes. Tutors' notes This module provides material which is useful for: • senior decision-makers in health care at national, regional or local level; • managers of health care institutions; • practitioners in the health care system; • other decision-makers such as legislators; patients, their carers and families; and decision-makers in other sectors, which are competitive or complementary with health care in terms of resources used. 2 Further references on costing matters are given at the end of the module. The book by Drummond et al. is particularly clear and useful (1). It has been drawn on extensively in preparing this module. 3 This module was written by Professor Chris Selby Smith of Monash University, Melbourne, Australia (e-mail: Chris.SelbySmith@BusEco.monash.edu.au). Learning to live with Health Economics V- 19 An improved appreciation of the material in this costing module is valuable for all participants in the health care system, especially those with important decision-making responsibilities, for whom appraisal is also particularly relevant. The ability to conduct costing analysis need not be so widespread, especially in terms of the technical detail. However, the broad way of thinking can have wide applicability. The exercises focus on costing aspects at the level of: national or regional decision-makers (Exercise 1), managers of health care institutions (Exercise 2) and health care professionals (Exercise 3). Each exercise asks participants to consider how the resources that are required can be analysed, used effectively and, if possible, augmented, and what implications there are elsewhere, either inside or outside health care. Participants are asked to distinguish between situations where the available

resources are expected to grow and those where they are likely to diminish. It is suggested that tutors seek to focus the discussion on how the costing information can be used to inform and improve decision-making, e.g. to enhance effective choice, to ensure scarce resources are used as effectively as possible, and to throw light on the equity or inequity of the cost distribution; and the effect of the distribution and redistribution of costs on the incentives for stakeholders (such as governments, individual health care institutions, health professionals and patients) and their subsequent decisions (in health care and perhaps elsewhere). Tutors are requested to collect relevant costing studies of which they become aware (at each level and for the variety of possible decision-making situations) and to provide them to WHO in Copenhagen. Over time, the additional case studies will be a valuable supplement to the existing material. Introduction Resources are scarce. As a result, it is not possible to produce all the outputs which would be thought desirable. Thus, choices have to be made in health care as in all areas of human activity. These choices are made on the basis of many criteria, some explicit and some implicit. Economic analysis seeks to identify and make explicit one set of criteria which are useful in deciding how to allocate the resources that are available among the various competing uses for them. The cost of alternatives is relevant to much decision-making in health care. Policy-makers in the health sector at national, provincial/state or regional level frequently compare the costs (and the consequences) of alternative programmes. For example, they may compare preventive care with curative care, one way of treating a disease with another, or the extra cost of drugs compared with the reduced hospital costs attributable to them through shorter lengths of stay. Similarly, policy-makers at national, provincial/state or regional level will be comparing health programme costs (and consequences) with those elsewhere, say in education, transport or housing. The relative costs and consequences are also relevant for decision-making by the managers of health care institutions and (although probably to a lesser extent) by health practitioners. Costs are relevant for each type of economic evaluation in health care, including costminimization, cost–effectiveness analysis, cost–benefit analysis and cost–utility analysis. In fact, costs tend to be relevant to most, if not all, health care choices. When costs vary widely they can be a powerful influence on the decisions that are taken. However, costs cannot be considered in isolation; they have to be weighed against the consequences arising from the different courses of action. V - 20 Learning to live with Health Economics An important point to remember when embarking on a costing study is that, to an economist, cost refers to the sacrifice of benefits involved when given resources, say trained labour or financial resources, are consumed in activity A, say in a particular health care programme, rather than in activity B, say elsewhere in another health care programme or in an activity in another sector, such as education, housing or transport. The true cost or sacrifice being made is represented by what is foregone, what economists term the “opportunity cost”. Therefore, in a costing study the analyst’s attention should not be confined to financial expenditure alone. The activity may use other resources. The consumption of some of these resources may not be adequately reflected in existing market prices. Examples include the time patients or their families have to take off work or spend travelling for a health care treatment, the time contributed by volunteers, the below market wage earned by some health care workers (such as those in religious orders) or clinic space which has been donated rather than purchased or leased. Koopmanschap and Rutten (2) argue that indirect costs (e.g. production losses from ill health) can make up a substantial part of the costs of health care programmes, and propose a method of measuring them. They conclude that indirect costs tend to play an important role if health care programmes produce health care effects relatively quickly, if there is a considerable effect on (shortterm) absence from work, and if a significant

proportion of the target population is employed at the moment they benefit from the programme. This module focuses on general matters. More detailed discussions are available in the items in the list of further reading at the end of the module. In many practical situations the options available to the analyst are limited by the availability of data. In the longer term it is worth considering the utility of improving the data, but in the short term the limitations of the data may seriously constrain the precision of the cost estimates. It is also important to recognize that many costing issues can be context-specific. For example, the viewpoint adopted for the analysis can be significant. Thus, what patients spend on travel is a cost from the point of view of the patient (and society generally), but not from the perspective of the ministry for health (unless it offers reimbursement). Similarly, workers’ compensation payments, which are a cost to the paying government and a gain to the patient (recipient), are a “transfer payment” and thus neither a cost nor a gain in society generally. In some cases, certain costs are likely merely to confirm a result which would be obtained by consideration of a narrower range of costs. In such cases, it may not be worthwhile to complicate the analysis. However, such cost categories should be identified and some justification given for their exclusion (perhaps based on their small size, probable insignificant influence on the outcomes and the results of previous empirical work). Total costs To make a satisfactory estimate of total costs it is essential to know exactly what is to be costed. It is perhaps surprising that, in many costing studies, it is not possible to be clear about who is doing what, to whom, where and how often. Such clarity is a sine qua non for a satisfactory costing study. It also helps readers of a study to assess for themselves whether any relevant costs have been omitted. A similar point applies for consequences, but this is less relevant for the present module. From the point of view of society as a whole, it is total costs for a given activity that are relevant. These are the total alternative opportunities that are being foregone to undertake this particular Learning to live with Health Economics V- 21 programme. However, for individual participants in the health care activity only some costs may be directly relevant to them. Total costs can be viewed from a variety of perspectives. This is considered further in the next section. However, one relatively simple and frequently used approach is to consider the total costs of a particular health care activity as consisting of three elements, as follows. (i) The costs of organizing and operating the programme, including dealing with any adverse events caused by the programme. In some costing studies, identifying such costs involves little more than listing the resource items used in the health care activity. Variable costs should be included, such as the time of health professionals, supplies and the leasing of equipment. Overhead costs should also be included, including such items as light, heat, rent or capital costs. Valuing these elements tends to be more difficult for the capital costs than for the recurrent costs. (ii) Resources contributed by the patients or their families. This would include the value of their time, for example while absent from work due to ill health or looking after family members when they are ill. These costs represent additional resources contributed to the treatment process. Patients may also make payments which cover some of the costs of organizing and operating the programme. To the extent that these contributions reduce the costs of (i) above, which were initially borne by other parties (such as the hospital or the government), patients are transferring costs between the various parties to the complete resource allocation decision rather than changing the total costs incurred by society generally. (iii) Resources consumed (or reduced use of resources) in other sectors as a result of the health care programme or activity. Some health care programmes, such as those for the elderly, consume resources from other public agencies or the voluntary sector. Occasionally, it may happen that the operation of a health activity or programme changes the use of resources in the broader economy. If these factors are substantial they should be included in

the economic analysis, although for many health care programmes they are likely to be insignificant. Once the relevant range of costs has been identified for the particular health care activity or decision under consideration the individual items must be measured and valued. Here there are two elements: (i) measurement of the quantities of resources used, and (ii) the assignment of unit costs or prices. The measurement of quantities of resources often depends on the context for the economic analysis. For example, if an economic study is being conducted alongside a clinical trial, data on the quantities of resources may be collected on an integrated base, for example through the case report forms. On the other hand, if the economic study is free-standing, the quantities of resources may be estimated by a review of case notes or from routine data systems. However, it may only be possible to estimate the quantities of some resources by developing special data collections, for example by asking patients directly or getting them to keep a diary. Generally, market prices will be available for many of the items of resources. Where this is the case the costing process is simpler and more robust. Theoretically, the proper price for a resource is its opportunity cost, i.e. the value of the benefits foregone because the resource was not available for its best alternative use. However, the pragmatic approach to costing, which is normally adopted, is to use existing market prices unless there is some particular reason to do otherwise. For example, the prices of some resources may be subsidized by a third party, such as a charitable institution or foreign donor. Other resources may be provided by volunteers. V - 22 Learning to live with Health Economics Although the costing of resource items is often relatively unambiguous, there are a number of issues which can arise in costing studies. Some of these are discussed in the section on identifying, measuring and valuing costs below. Various perspectives Total cost can be divided into its components in a number of different ways. For example, Creese & Parker (3) have made a useful analysis of costs for programme managers, including a classification of costs, in terms of capital and recurrent inputs, by reference to the activity or function for which the resources are used and by the source (or provider) of the resources. Creese & Parker define costs as the value of resources used to produce something, including a specific service or set of services as in a health programme. Complementary material is also available, such as the methodologies and worksheets developed by WHO to assist managers of HIV/AIDS programmes who want to use cost analyses to facilitate their own decision-making. More generally, WHO headquarters in Geneva is developing a template for costing across health programmes, to improve methodologies, facilitate comparisons and strengthen accumulative learning. At a more specific level, costing can be considered in relation to particular aspects of the health care system. Abernethy (4) argues that an understanding of hospital costing systems and their strengths and limitations is essential if the information these systems can provide is to be used in economic analyses. For example, an understanding of cost behaviour is critical for the planning of new services or the expansion of existing services. In relation to the development of clinical costing systems, say in hospitals, Abernethy identifies two fundamentally different approaches. One approach is based on “cost-modelling” principles and the other on “cost-finding” principles. The cost-modelling approach could, for example, be based on the Yale Cost Model, developed by a team of researchers from Yale University, where the cost object is a diagnosis-related group (DRG). This is a top-down approach to costing which uses general ledger data and predetermined allocation statistics to assign all hospital costs to a particular DRG. The final result of the cost allocation process is an average cost for a patient within the particular classification. The cost-finding approach is based on the cost accounting principles that are used in the product costing systems developed and implemented in the manufacturing sector. This approach is often referred to as a patient-costing system, because the cost object is the

patient. The approach is based on actual costing principles. Thus, the cost of a treated patient is determined by tracing the direct costs associated with the individual services received by the patient as well as an allocation of indirect patient and nonpatient care expenditure (e.g. hospital overheads). This type of system adopts a bottom-up approach. The smallest cost object is the actual service, for example a laboratory test, received by a patient. The cost of this test can then be added to the costs of all other clinical services provided to a patient to arrive at a cost measure for the treated patient or other defined cost object. In many costing systems in health care the absence of capital cost information is a significant limitation. Capital costs are particularly important in some types of service and in the treatment of certain types of patient. The resources consumed by a particular programme in the health care system can also be considered in terms of sector, source of funds and type of cost. The total resources used in the programme are the same but they are viewed from different perspectives. In money terms, the quantities of each component are measured and the total cost is calculated by multiplying the quantities by the relevant prices for each component. Learning to live with Health Economics V- 23 In reporting as well as calculating the costs it is important to show the units of each input and their prices separately (the “ingredients” approach). This facilitates comparisons, the generalization of results across settings, and the extrapolation of historical experience to new settings or new combinations of prices and quantities. Thus, work undertaken in one context can have maximum relevance for decision-makers in other contexts. The reservoir of knowledge (5,6) increases more rapidly, with benefits for other decision-makers and researchers. Sectors In terms of resource consumption by the sector which bears the costs, a threefold distinction can be made: the health care sector, participants in the programme and their families, and other sectors. This is the approach outlined above. Note that the net costs borne by a sector can be positive or negative, as when participants’ true costs are more than compensated for, say by generous travel allowances or per diem payments. Resource consumption in the health care sector includes those costs borne by the sector, such as organizing and operating the programmes (ideally in terms of opportunities foregone). Note, however, that the costs to the health care sector include not only the initial programme but also any continuing costs associated with it. For many health activities there are substantial continuing costs. Secondly, costs can be incurred by the participants in a health care programme (or their families). For example, participants may not be fully recompensed for the cost of participating (travel, attendance fees, accommodation, etc.). The leisure activities or work time of participants can be reduced, which in turn affects the valuation of the time contributed to the health care programme in terms of opportunities foregone. If participants were

unemployed or underemployed the opportunities foregone tend to be less. Note that the opportunity cost of participation is not necessarily equal for each family member. For example, if in some countries or regions the opportunity cost of an absence from home of the mother of a family, say for an activity lasting a week or a fortnight, is substantially greater than for her husband or son, this is likely to affect programme participation by gender. Thirdly, resources can be consumed in other sectors. For example, some health care programmes use resources in the education sector such as universities, technical institutes or research organizations. Many health care programmes also rely on resource inputs from the voluntary sector, with implications for such matters as costing, sustainability and continued availability for an expanding programme. To the extent that these resources are diverted from other worthwhile activities, opportunity costs will be incurred. These can be substantial. Sources of funds Four sources of funds are particularly relevant for health care activities in many less developed countries: national sources, whether public or private, including those from the health sector; WHO resources; other official sources of funds, such as the World Bank or

similar regional bodies; and contributions from the voluntary and nongovernmental sector. Resources can be provided in cash or in kind. Since the sources of funds are additive, the total cost of a programme is the sum of the national contribution and the contributions from other sources. There is a tendency for particular stakeholders to view costs in terms of what it costs them. Thus a national health authority which funds two thirds of one programme but only a third of another, whose total costs are equal, is likely to favour the latter even if the former programme has a higher ratio (up to twice as high) of overall benefits to overall costs (i.e. is a much more desirable programme on the basis of overall economic evaluation). To the national health authority one programme can look V - 24 Learning to live with Health Economics less costly than the other, although in truth their total resource costs, including the costs borne by all parties, are equal. Other stakeholders are likely to act similarly. From the donors' point of view, varying the levels of subsidy for particular programmes can provide differential incentives for national health authorities to act in particular ways. This would be a method of achieving maximum health care outcomes for the donors from their limited resource budgets, but it requires information on costs and consequences which is often not available. National health authorities can act in analogous ways to encourage particular activities by subordinate levels of government or by the private sector. Another classification of health care costs, overall or by reference to particular programmes, focuses more on the internal sources of resources. For example, a distinction might be made in federal systems between resources contributed by the national authorities and the resources contributed by state, provincial and regional governments. Another distinction which is often drawn is between costs borne by the public sector and those borne by the private sector. In most advanced countries the proportion of total health care costs borne by the public authorities has been rising, but in some countries the private contribution is still as high as a quarter to a third. A further distinction is sometimes made within the private contribution to health care expenditure, between contributions through health insurance arrangements and contributions made directly to providers by patients or their families at the point of service. Types of cost Here, a major requirement is consistency, for example between the classification of costs in different programmes, in different countries (or regions) and for the various sources of funds. Comparisons tend to be unreliable if the data are not consistent. Consistency in the data is likely to be more readily achieved prospectively than retrospectively. It is important that double counting of costs does not occur. In the real world, it may be necessary to ascertain what classifications are most widely available and, so far as good practice permits, build on them. Note that some of these costs are represented by financial expenditure whereas others are opportunity costs. Ideally, the financial estimates would approximate closely to the true opportunity costs of using the resources for these activities. In practice, this is not always so. Against this background a classification of cost headings could include such items as the professional staff in continuing employment who provide the health care activity. This would include the wages, salaries and on-costs4 for the health care workforce – doctors, nurses, dentists and allied health professionals. The health care activity would represent the entire workload of some staff but only a part of it for others. In the latter case an estimate is required of the appropriate proportion of their salaries and on-costs which should be allocated to the particular health care activity which is being costed (including any follow-up activities). In many cases estimating the appropriate proportion is likely to involve judgement and approximations. In some cases the particular health care activity being costed will involve additional costs for the participation by members of the health workforce, such as for daily allowances, food or accommodation. Secondly, the costs would also include the wages, salaries and on-costs of those professional staff who are temporarily

employed to undertake the necessary work for the health care activity being costed. They may be employed solely for this health care activity, in which case costing is facilitated because there is no need to apportion their costs between more than one health care programme. The 4 The costs of a person while engaged in a health care activity other than salaries/wages. Learning to live with Health Economics V- 25 intention is to estimate the full cost attributable to the programme, again including any follow-up activities involved. A third category of costs relates to facilities, equipment and materials. When there are dedicated items which are used solely for the particular health care activity being costed their total annual costs would be included. This may often be the case for materials. However, in the frequent cases where, for example, facilities and equipment are shared between health care activities or programmes the total costs would need to be apportioned between them. A number of methods have been proposed to allocate such shared costs between health care programmes, such as direct allocation, step down allocation, step down with iterations or simultaneous allocation (1, pp. 62–66 and the worked example at pp. 74–81). Judgement and approximations tend to be required. Often there is no unambiguously correct way to apportion such common costs between different users or health care programmes. Frequently, facilities and equipment will be used for a number of years, in which case the overall costs also need to be allocated over time. The cost of facilities, equipment and materials includes the recurrent costs of using them for the health care programme, say over an annual period, and a portion of the capital cost which equates to their use over that period for that health care programme. A fourth element of cost relates to administration. This includes the wages, salaries and on-costs of administrative staff, including support staff, cleaners, cooks, janitors and those who work in the central administrative services such as finance and budgeting, human resources, planning, public relations and information technology support. There are also related costs, such as their accommodation, equipment and consumables. In theory, these overhead costs should be allocated, in an appropriate proportion, to the individual health care activity being costed. In practice, this often proves difficult and rough approximations are adopted for estimating these costs by health care programme. Some implications First, if the costs of a particular health care intervention (the point applies also to consequences) have been evaluated in a setting that is technically inefficient, while the costs of another intervention have been estimated in a setting that is technically efficient, conclusions on relative costs (and relative efficiency and their relations) can be biased. The confounding effect of variations in technical efficiency across study locations for the development of generalized comparisons of costs and consequences from alternative health care interventions, for example on cost–effectiveness league
6 tables, needs to be minimized. At the same time, systematic variations in technical efficiency (due to such factors as health system characteristics or epidemiological patterns) should be incorporated. Second, there can be stronger linkages between certain types of cost and certain sources of funds or sectors than others. It is worth looking out for such linkages when undertaking cost studies. For example, it may be that national or regional health authorities are more likely to finance local support services, participants are more likely to fund the opportunity costs of participating in health care activities, and external donors are more likely to finance visiting experts. If particular stakeholders focus on some costs rather than others, there can be a danger that no party is primarily concerned with the overall balance of costs (and benefits) for the health care programme or between programmes. Yet that is essential for achieving the optimal allocation of resources. It is a particularly serious problem if the national or regional health authority adopts a partial view, for example, if it focuses only on the costs it bears. Improved information on overall costs and their distribution among all the parties to the complete resource allocation decision tends to act as a

counterweight to any partial viewpoints which may be fostered by prevailing arrangements. V - 26 Learning to live with Health Economics Third, there is a challenging managerial and coordinating role to bring the disparate cost components together in a coherent whole so as to facilitate informed decision-making by national health authorities. Consideration of costs in terms of the different types of cost, the different sources from which the costs are defrayed, and the different sectors which bear the costs, raises implications for managerial decisions in the health care sector about alternative ways of providing health care in general or an individual programme in particular. Consider the following. • At what scale should the programme be provided? Some costs, such as the initial development costs, may increase relatively little with growing participation in the programme. If the fixed costs are large, the average costs can fall sharply as participation increases. Other costs, such as the opportunity costs of participation, may fall relatively little. If the total costs are mainly fixed costs, average costs decrease markedly, whereas if total costs are mainly variable costs, average costs do not decrease much at all as the health care programme increases in size. • What should be the breadth of geographical participation? Knowledge of the cost function can be most helpful in informing managerial decisions. For example, there may be a decreasing average cost of providing the health care activity as participation increases, but each participant may incur extra costs, for example for travel, accommodation and absence from employment. If the public authorities (or a donor organization) meet the cost of providing the programme, but participants have to bear the costs of attendance, equitable access (including geographical participation) is likely to be limited. • What should be the balance between the capital and recurrent costs when providing particular health care programmes? Greater use of distance approaches or electronic participation increases some costs, including capital costs for infrastructure. However, such approaches could sharply reduce travel costs for (at least some) attendees or the recurrent costs of participants who previously had to be absent during working hours (assuming they had access to the necessary facilities). Capital costs may be paid from a different budget than recurrent costs. Knowledge of the cost function facilitates appropriate decisions by managers about the substitution possibilities between capital and recurrent costs. Fourth, various equity aspects of health care programmes can be highlighted through consideration of resource use in terms of the different types of cost, the different sources from which costs can be defrayed, and the different sectors which bear them. Analysis of the costs of different programmes, or programmes provided in different ways or different places, can reveal interesting patterns. Are the most expensive or most heavily subsidized programmes accessed equally by the rich and poor, the powerful and the powerless, women and men, young and old? Do programmes involving an absence from home and workplace enable men and women to participate equally? Do programmes provided face-to-face in a particular location (say the capital city) enable non-metropolitan staff in that country or relevant health care workers in other countries to participate as much as programmes which are delivered by distance approaches or electronically? The total costs and their distribution, while not all the information required, often throw light on some of the reasons why there is unequal access to health care programmes and how cost aspects contribute to inequitable outcomes. Identifying, measuring and valuing costs The cost information required for the optimal allocation of health care resources is often difficult to obtain. Three stages can be usefully distinguished in costing studies: identification, measurement and valuation. While these occur simultaneously in some economic analyses, it is good practice to consider each as a separate phase of the analysis (and for users to evaluate the results in this way). The three stages often tend, in practice, to be progressively more difficult. Learning to live with

Health Economics V- 27 Identification Even though it may not be possible to measure and value all of the costs and consequences of the health care programme under consideration, a full identification of the important and relevant ones should be undertaken. Identification consists of listing the likely resource implications of the health care intervention or activity as comprehensively as possible. Decisions can then be made about which effects should be included and which might reasonably be excluded. The perspective which is adopted for the study influences these decisions (e.g. society in general, particular groups or individuals who are affected, or other stakeholders) but, as mentioned previously, the perspective (at least) of overall society should generally be considered. Measurement Once the important and relevant costs have been identified, they must be measured in appropriate physical and natural units. For example, "measurement of the operating costs of a particular screening programme may yield a partial list of ingredients such as 500 physical examinations performed by physicians, 10 weeks of salaried nursing time, 10 weeks of a 1000 square foot clinic, 20 hours of medical research librarian time from an adjoining hospital, etc. Similarly, costs borne by patients may be measured, for instance, by the amount of medication purchased or the number of times travel was required for treatment, or the time lost from work while being treated." (1). Situations commonly arise where resources are used jointly by one or more programmes. These situations present a particular challenge. For example, in every hospital and in many other health care activities, numerous clinical services and programmes share centrally provided common overhead services, such as cleaning, administration, heating, light and power. In general, there is no non-arbitrary solution to the measurement problem. "Costing in a multiproduct firm is a difficult task, particularly when the final product is an amalgam of many intermediate products. There is no easy solution." (4), especially where a large proportion of costs, as in many hospitals, is both indirect and fixed. However, users of results should satisfy themselves that reasonable criteria, such as number of square feet, number of employees or number of patients, have been used to distribute the common costs. Sensitivity analyses can also be helpful in showing whether (and where) different assumptions would make a significant difference to the cost estimates. Users should definitely ascertain that the shared costs have, in fact, been allocated to the participating health care activities or programmes. The form in which the measured costs are reported also justifies attention. When making certain decisions it is helpful to know the distribution of costs, as well as their mean and median. There can be situations where the outliers are of particular interest. Aggregation of costs may result in more accurate costings for subgroups of interest being lost in the overall results. Valuation The sources and methods of valuation of the costs should be clearly
6 stated. Costs are normally valued in units of local currency, based on prevailing prices of, for example, personnel, commodities and services. They can often be taken directly from programme budgets. All current and future programme costs are normally valued in constant dollars of some base year (usually the current year) in order to remove the effects of inflation. The objective in valuing costs is to obtain an estimate of the opportunities foregone by using the resources in the particular health care activity rather than elsewhere. This may necessitate adjustments V - 28 Learning to live with Health Economics to some apparent programme costs. For example, this would be the case for donated facilities, subsidized services or labour contributed by volunteers that are received by one programme but not another. It is also relevant where such services would not be available in larger quantities if the programme was to be expanded. Valuing the cost of institutional care for a specific condition can present particular difficulties. The use of an average cost per day, calculated on the basis of the institution's entire annual case-load, is almost certainly an over- or underestimate of the actual cost for any specific condition. The difference can sometimes be quite

large. For example, accommodating an extra patient in a hospital bed which would otherwise have been unused generally results in extra costs that are well below the average cost for the whole institution. Top-down or bottom-up costing In principle, and with great effort in practice, it is possible to identify, measure and value each depleted resource, such as drugs, nursing time, lighting and food, in treating a specific patient or group of patients. This yields a relatively accurate cost estimate but the detailed monitoring and data collection can be expensive and time-consuming. Another broad costing strategy is to start with the institution's total costs for a particular period and then to improve upon the method of simply dividing by the total number of patient-days to produce an average cost per day. Quite sophisticated methods of cost allocation to individual hospital departments or wards can be used. An intermediate method is to accept the components of the general average cost for hotel functions (since these are relatively invariant across patients) and to combine this with more precise calculations of the medical treatment costs which are associated with the specific patients in question. Of course, the effort devoted to accurate estimates depends upon their overall importance in the study. However, in general, unthinking use of average costs should be avoided. Non-market items There are particular problems when values are imputed for non-market items, and also when it is judged that existing market prices should be adjusted. In relation to the former, the major non-market resource inputs to health care programmes tend to be contributed services or facilities, volunteers' time, and patients/families' leisure time. One approach to their valuation is to use market rates. For example, unskilled wage rates might be used for valuing the time contributed by volunteers, on the basis of a value of lost leisure time of anything from zero through average earnings to average overtime earnings (on the grounds that this is the price that an employer must pay, at the margin, to buy some leisure time from the worker). A common practice is to value lost leisure time at zero in the primary analysis and then investigate the impact of other assumptions through sensitivity analysis. A slightly different approach is to identify and measure units of, say, voluntary input and document these when reporting results. The decision-maker can identify those programmes that rely heavily on volunteers and make appropriate adjustments if these are judged necessary. In relation to the need to adjust market prices, it has long been recognized that, owing to imperfections, market prices may not reflect opportunity costs. For example, hospital charges will not equal costs if the cost of one activity is subsidized by another; and physicians' fees may not reflect the relative skill level for different procedures. Drummond et al. (1) suggest that before analysts adjust market prices, they should be convinced that two conditions are satisfied: first, that leaving prices unadjusted would introduce substantial biases into the study; and second, that there is a clear and Learning to live with Health Economics V- 29 objective way of making the adjustments. These issues have been explored most extensively in the context of hospital charges in the USA (7). Note that if the economic study is being undertaken from the viewpoint of a third party payer, the actual charges may be more relevant than the costs. Yet even this approach is not necessarily clear cut, for instance when the third party does not pay the full amount billed. And from the point of view of society, the total opportunity costs continue to be relevant. Two other matters are worth noting. First, the boundaries of a health care activity or programme, and thus its costs, are not always easy to define precisely. They may require careful consideration. For example, many health care programmes involve not only initial expenditure but also updating and refresher activities, which require further uses of scarce resources. Health care programmes may require changes in cooperating factors, such as operating procedures, work organization, technology and management (even changes in other sectors which are complementary to the health care activity), if the full benefit is to be obtained from the programme in

terms of health care outcomes. In addition, the human capital created by many health care activities often yields benefits over a long period of time. Second, how the resources to defray the costs incurred for a particular health care programme are raised can have implications for how they are spent. Both the aggregate level of health care expenditure and how it is distributed can be affected by how the required revenue is raised. For example, if health care consumers have to meet costs from their own pocket at the point of service they are likely to act differently (e.g. seek less services) than if the costs are defrayed from public revenues raised through taxation. Total health care costs will tend to be lower in the former case, and the distribution of total costs between the various parties to the complete resource allocation decision will also be different. Handling capital costs, average and marginal costs, timing and uncertainty, and incentives inherent in the distribution of costs Handling capital costs Costs include capital as well as recurrent costs. Recurrent costs are included in the estimates of resource use for the time period in which they were used, e.g. the current year. But how should capital outlays be handled, such as those for land, buildings, equipment or other long-lasting assets? The flows of resources from these capital assets being used for the process of providing the health care activity should be added to the relevant recurrent costs, not the entire stock of the capital assets (which can be expected to continue to produce flows of useful resources for productive health care activities over a number of years). "Capital costs represent an investment in an asset which is used over time" (1): in time, they wear out or depreciate (although land may not depreciate). Frequently, capital costs are not listed in the accounts or budgets of the organization (especially public organizations) because they have been funded in advance, sometimes by a one-off grant. Capital costs can be thought of as comprising two components. The first component is the opportunity cost of the resources represented by the capital asset. For example, the land used for a hospital could have been used for something else, perhaps a school, public housing or a park. The cost is the foregone opportunity to use the resources in some other activity which would yield positive outcomes. This value is usually calculated by applying an appropriate interest rate to the amount of V - 30 Learning to live with Health Economics resources invested. The second component of the capital cost represents the depreciation over time of the asset itself. Various accounting procedures, such as straight line or declining balance, can be used in the accounts of the organization. However, accounting practices may relate more to company tax laws governing the depreciation of assets than to the real change in the value of the asset. Note that if capital outlays relate to resources that are used by more than one programme, they require to be allocated between them. Average costs and marginal costs Economists draw an important distinction between average costs per unit of output in a given health
6 care activity and marginal costs, which are the extra costs of producing one more (or less) unit of output. Where average costs are falling, for example where there are high fixed costs for the programme and participation is increasing, marginal costs are below average costs, sometimes well below. Conversely, if average costs are rising, for example in a poorly managed health care facility, marginal costs will be higher than average costs as participation in the health care activity increases. To remain viable a health care programme has to cover its average costs over a reasonable period of time, but in terms of small changes in the level of activity it is the marginal costs that should be related to the extra benefits likely to be received. It is desirable to record capacity utilization, so that the cost figures can be interpreted appropriately (and remedial action taken, if required). When making a comparison between two or more health care activities (or a health care activity and an activity in another sector of the economy) it is worth asking what would be the extra costs (and consequences) of having a little more or a little less. In practice, it is important to recognize the difference between average and marginal costs (and to appreciate its potential significance for

decisionmaking), although it is often the case that the issue can only really be explored in the context of specific locations or situations. For example, the extent to which costs can be saved when the average hospital stay for patients is shortened depends on the flexibility which is available locally and the time period over which the change is made. Freed resources will not always be redeployed efficiently. For example, if unemployment is high, reduced labour requirements may well not result in higher output elsewhere. Analysts have a responsibility to point this out explicitly where it is significant for the cost estimates and has implications for decision-making. Timing and uncertainty The cost estimates may need to be adjusted for timing and for uncertainty. This is not a problem if all the costs are incurred immediately, but often costs are spread over a period of time. In particular, alternative uses of resources may have different time profiles of costs (and consequences). The time profile of costs and benefits can also differ within a single health care programme. Future cost streams are reduced or "discounted" to reflect the fact that the resources spent or saved in the future should not be weighted as heavily in programme decisions as resources spent today. This is primarily due to the existence of what economists call time preference. Individuals and societies prefer to incur costs later (and receive benefits sooner) because they can benefit from them in the meantime. Time preference arises for various reasons: individuals (and to a lesser extent societies) may have a short-term view of life: the future is uncertain – with positive economic growth, individuals and societies expect to be more wealthy in the future, and since most individuals appear to have a positive rate of time preference, a positive return can usually be obtained when making a riskless investment. Note that the notion of wanting to postpone costs (or preferring benefits today) extends beyond money transactions to goods and services that cannot easily be traded. Learning to live with Health Economics V- 31 Also, life contains uncertainty and imprecision, and so do cost estimates. Careful analysis can help to identify critical methodological assumptions or areas of uncertainty. Analysts often attempt to rework their analyses, employing different assumptions or estimates to test the sensitivity of their results and conclusions. If large variations in the assumptions do not produce significant alterations in the cost results, they tend to have more confidence in the original estimates. If the converse occurs, more effort is required to reduce the uncertainty and improve the accuracy of the variables that are particularly significant for the cost estimates. Such sensitivity analyses are an important element of a sound costing exercise. Where the cost data are stochastic (i.e. have a mean and variance), rather than the point estimates which have often been used in the past, tests of statistical significance can be performed or confidence intervals presented. Incentives inherent in the distribution of costs The distribution of total cost among the various parties to the complete resource allocation decision, that is the costs they bear, can have important incentive effects and affect the actions of decisionmakers. To take a simple example, a particular health care activity may clearly be a worthwhile use of scarce resources when viewed in terms of its total costs in comparison with its total benefits. However, if the costs are all borne by one party and the benefits are all received by another party, the former will be unenthusiastic. If they are powerful, either economically in a market situation or politically in a public-provision situation, they may well block the effective implementation of the programme. Of course, many real life situations are not as blatant as this, and reallocation of the costs (and benefits) can promote a less confrontational situation. Nevertheless, the distribution of total costs generates a particular pattern of incentives for participants which is likely to influence their decisions (such as whether to participate in the programme). Participants may react to incentives which exist but were not consciously intended, or to incentives resulting from cost distribution patterns which have been proactively designed to

encourage particular actions, such as participation in screening programmes. Knowledge of the distribution of costs, as well as of their total size and composition, is necessary for effective health care decision-making, whether this is aiming at achieving an efficient use of scarce resources or equitable outcomes. Presentation of cost information The purpose of collecting, refining and analysing the cost estimates for different health care programmes, or for the health sector as a whole, is to improve decision-making. Cost information is not the only input required for decision-making in health care, but high quality decision-making without adequate cost information is generally impossible. There are many purposes for which cost information is relevant, and the particular cost information required can only be determined in the light of the specific objectives of the decision-maker. Abernethy notes that “costing information may be required to determine the cost of a particular patient for cost reimbursement purposes, or for comparing costs of different diagnosis-related groups, or for determining the cost of a laboratory test to establish a price. Alternatively, the management of a hospital may wish to use costing information for developing a clinical budget and subsequently to monitor performance. These decisions require different types of cost” (4). No decision-makers are likely to achieve their goals unless they are clear about what they want to achieve and carefully marshal the means (including cost information) by which they can reasonably expect to get there. V - 32 Learning to live with Health Economics Different decision-makers will, perfectly legitimately, have rather different objectives, or a rather different balance between different objectives. For example, politicians or bureaucrats in central agencies at national level are likely to be concerned with the appropriate balance between the overall public and private sectors, and between health care and other competing uses for resources, while politicians and bureaucrats in the health sector at state, provincial and regional level are likely to give a greater priority to health care, their geographical area, and perhaps public sector activities. Those decisionmakers responsible for particular health care institutions, such as hospitals, facilities for the care of the aged or community health centres, are likely to focus more on obtaining what they regard as their fair share of resources and using them effectively to produce efficient and equitable health care outcomes. Individual practitioners and the consumers of health care services are likely to focus more on their specific concerns within the overall structures and incentive patterns established by higher level decision-makers. Cost information is relevant to the decisions of all these participants in the health care system. However, their focus differs as does the cost information they want, when they get it and how they use it. The way in which cost information is collected, analysed and presented can make it easier or more difficult for decision-makers to use it effectively. “The importance of identifying the limitations of the costing information and the potential effects on the results of economic analysis cannot be overstated” (4). For example, it has been increasingly recognized that disaggregated information is required by decision-makers, as well as the final summary result. They need to know how the information was obtained, what assumptions had to be made, what approximations were employed, how sensitive the cost results were to different (plausible) assumptions or approaches and so on, in order to know how much reliance to put on the final cost estimates and their components. Writers of economic studies are now encouraged to report prices and quantities separately, rather than expenditure totals alone. Similarly, if costing studies are not publicly available they are not likely to be subject to the same level of critical scrutiny. In the long run this militates against improvements in technique, the growth of shared knowledge and accumulative learning, all of which contribute to growth in the reservoir of knowledge available for future users, whether policy-makers, practitioners or researchers (6). Thirdly, it can be helpful to decision-makers – depending on precisely which questions they are concerned with – to have cost

information not only about total costs, but also about their composition and distribution. It is necessary to know the magnitude of total costs, for example, when decisionmakers in central agencies, the government or parliament are considering whether to use scarce resources in the health care sector or elsewhere, or comparing alternative uses for resources within the health care sector. When other things, especially the expected benefits, are similar, activities that are less demanding in their use of resources will be preferred over more expensive activities. The composition of costs, for example between different types of expenditure or between different sources, can also influence decision-making. For example, if an existing activity is heavily dependent on contributed facilities or on voluntary labour, it may not be possible to expand its scale without a significant increase in costs. Or if foreign donors provide many more resources for some health care activities than for others, the former will tend to be preferred over the latter by domestic decision-makers (assuming other things are equal). The distribution of costs can influence the actions of individual parties to the complete resource allocation decision by changing the incentives they face to participate or withdraw. If the existing pattern of incentives resulting from the current distribution of costs (and consequences) is judged to be undesirable from the point of view of efficiency or equity, it may be possible to reallocate the costs (even if the total costs to society are unaltered) to achieve more satisfactory outcomes. Learning to live with Health Economics V- 33 Finally, the linkages between costing studies and health care decision-making can often be improved. Decision-making in health care is a complex process, involving many actors, and costing information is only one input into their decisions (often it is not the most important input). Research and investigation, including for costing purposes, is a domain which has many differences from decisionmaking, whether at policy-making or practitioner level. Sometimes decision-makers are concerned about the quality of costing studies, including the large number of assumptions that are made. Health care practitioners, who usually have some knowledge of biomedical research, tend to be more comfortable with evidence based on randomized controlled trials rather than on modelling studies. Thus, the type of costing study can affect where it has an audience and how it might be used in decision-making. Sometimes studies, particularly those conducted at a distance, do not adequately reflect the concerns of local decision-makers. For example, many economic studies in health care do not examine the costs of implementing the preferred course of action. Other studies appear to assume that savings, such as in reduced hospitalization costs, can be realized easily. However, from a local decision-making perspective these can both be significant issues. It is important that decision-makers have adequate access to costing information and that the results are communicated in a way that busy decision-makers can readily understand. Research, including improved knowledge about costing matters, is cumulative. Much research does not stand on its own as isolated work but adds to that which existed before. This accumulating body of knowledge (it can also be diminished or unavailable) can contribute to the improvement of particular techniques or methodologies as well as to the creation of a climate of opinion and the development of a set of ideas, so that at any given time certain ideas, approaches or ways of thinking are “in” while others are not. The outputs of research and development, including costing studies, also include human capital, such as research skills and attitudes and trained personnel. The potential for different emphases by researchers and decision-makers underlines the importance of linkages between them, the desirability of two-way flows of information throughout the costing study (not solely when it is completed) and the benefits from collaboration, based on diverse contributions including costing expertise, to improve health care processes and outcomes. An emphasis on linkages increases the mutual responsibilities of the parties. Enduring linkages, based on sustained

mutual esteem and an understanding of the potential contribution of each party, are critical to enable costing studies and approaches to contribute effectively to high quality decision-making by policymakers and practitioners. Exercise 1 You are a senior decision-maker at national level in the health ministry. You are seeking: a. to obtain as many resources for the health sector as you can in competition with potentially valuable uses of the resources in other sectors, such as education, transport, defence and public order; b. to ensure that the resources provided for the health sector are used in the most efficient, effective, economical and equitable fashion. What cost information would you use for each purpose, if it was available? If it was not available, to what extent would you seek to develop it? Exercise 2 You are a manager of health services, say a hospital, facility for care of the aged or community health centre. How would you use the information available to you on costs to combine resources and produce health care outputs in the most efficient and equitable way? What other information on costs would be useful? To what extent would the extra cost of generating it be justified? To what extent would your use of costing information encourage continuing improvements in the future? Do actions taken by you either increase or decrease the costs borne elsewhere in the health care system (including by patients or their carers)? Finally, if the resources available to you are shrinking, would you use cost information in the same way as when they are growing? If not, what would be the differences and why would they occur? Exercise 3 You are a practising health care professional, say a doctor, nurse, pharmacist or dentist. How can you use the resources which are available to you to produce the best outcomes for your patients? To what extent can you reallocate the resources to which you have access? In what ways would reallocation improve the outcomes for your patients (and any other stakeholders)? Are there any ways in which the available resources could be augmented by you? Are there constraints on your practice which increase costs, especially if they do so without improving outcomes? Do actions taken by you either increase or decrease the costs borne elsewhere in the health care system (including by patients or their carers)? Do you take these factors into account when making your decisions? Finally, if the resources available to you are shrinking rather than increasing, how would you decide which activities to reduce and to what extent? How would your approach differ from the approach you would follow when resources are increasing (and why)?
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ED. Cost–effectiveness in health and medicine. Oxford, Oxford University Press, 1996. HORGREN, C.T. Cost accounting: a managerial emphasis, 5th ed. Englewood Cliffs, NJ, Prentice Hall, 1994. KRAHN, M. & GAFNI, A. Discounting in the economic evaluation of health care interventions. Medical care, 3: 403–418 (1993). LUCE, B.R. & ELIXHAUSER, A. Estimating costs in economic evaluation of medical technologies. International journal of technology assessment in health care, 6: 57–75 (1990). RAMSEY, R.H. Activity-based costing for hospitals. Hospital and health services administration, 39: 385–396 (1994). SELBY SMITH, C. & DRUMMOND, M.F., ed. Economic evaluation in Australian health care. Canberra: Australian Government Publishing Service, 1995. SELBY SMITH, C. & DRUMMOND, M.F. R&D's impact on decision-making by practitioners and managers: intersectoral and international perspectives. In: Baldry, J. ed. Economics and health: 1999, Sydney, University of New South Wales, School of Health Services Management, 2000. V - 36 Learning to live with Health Economics Learning to live with Health Economics V- 37 5.3.1 Economic evaluation Michael Drummond5 Key messages • There are a number of criteria that might be used in evaluating health care treatments and programmes. • Economic evaluation is concerned with assessing efficiency or value for money. • There are many forms of economic evaluation (e.g. cost–effectiveness analysis, cost-benefit analysis) but all compare the costs and consequences of treatments and programmes. • It is important to understand the key methodological principles of economic evaluation, including the consideration of an adequate range of alternatives, the use of good evidence of effectiveness and allowance for uncertainty in estimates. • Economic evaluation can be used in association with a range of policies to encourage the rational diffusion and use of health technologies, including planning specialist facilities, reforming payment schemes for institutions or health care professionals, and developing health care practice guidelines. • Economic evaluation can be used to assess health-producing measures in different sectors of the economy, including road safety, environmental protection and occupational health. Tutors' notes A wide range of groups within the health care system would benefit from understanding more about economic evaluation. The core exercise in this module (Exercise 1) is aimed at the level of (critical) appraisal of economic evaluation methodology. It can be used with the following groups: • civil servants and other governmental technical staff • health service managers • health care professionals (e.g. doctors, nurses). 5.3 Evaluation 5 This module was prepared by Professor Michael Drummond, Centre for Health Economics, University of York, York, United Kingdom (e-mail: chedir@york.ac.uk). V - 38 Learning to live with Health Economics Particular benefit can be achieved by running the exercise with a multi-professional group. The exercise requires the group to have access to a published study relevant to their own setting. The choice of the study is left to the tutor, but as a fallback the paper by Mark et al. (1) can be used, as a worked answer is provided in the book by Drummond et al. (2). The second part of the module (including Exercise 2) is aimed at the level of appreciation and can be used with the following groups: • policy-makers (e.g. elected officials) • civil servants and other governmental technical staff • health service managers. It may also be used with health care professionals, but would probably need to be structured around a specific issue, such as the purchase of a piece of equipment, the listing of a drug on the formulary, or the development of a health care practice guideline. The third part of the module will be of most interest to individuals with broader responsibilities for health and health care. It is aimed at the level of appreciation and could be used with policymakers and civil servants. It could also be of interest to such officials in finance and ministries other than health. Introduction There are a number of criteria by which health care treatments and programmes can be evaluated. These include effectiveness, equity, access and efficiency. Different

actors outside and inside the health care system (e.g. politicians, managers, health care professionals and patients) will place different emphases on the various criteria. For example, politicians may be particularly interested in equity or fairness in the distribution of health care resources, professionals will normally be most interested in effectiveness and managers will be most interested in the budgetary consequences of health care interventions. Increasing pressures on health care budgets have led decision-makers to search for methods of assessing the value for money from health care treatments and programmes. In economic evaluation, programmes are compared in terms of their costs and consequences. The consequences typically include improvements in health outcomes and savings in health care resources. There are a number of forms of economic evaluation, each following the same general methodological approach but differing in the extent to which the health outcomes are measured and valued. For example, in cost–benefit analysis attempts are made to value all the costs and consequences in money terms. On the other hand, in cost–effectiveness analysis the health outcomes are measured in the most appropriate natural units, such as life-years gained or disability-days avoided. Economic evaluation is a multidisciplinary activity, to which many health care professionals can contribute. For example, clinicians and epidemiologists can advise on the quality of evidence on the effectiveness of the interventions being evaluated. Conversely, administrators and finance personnel can provide data on the costs of interventions. Usually, economic evaluation requires a synthesis of information from a number of sources, including clinical trials, observational studies and routinely available data sets. Learning to live with Health Economics V- 39 It should be remembered that economic evaluation is an aid to health care decision-making, not a substitute for decision-making itself. Indeed, it incorporates a number of important value judgements and its contribution is to make these more explicit for the person ultimately taking the decisions. The first part of this module deals with aspects of the methodology of economic evaluation, since it is important that health professionals and policy-makers understand how to tell a well conducted study from a poor one. The second part deals with the application of economic evaluation in health care decision-making, by exploring the potential decision-making mechanisms in which economic evidence could be used. Finally, the third part of the module extends the discussion to a broader range of interventions to improve health, including not only health care but also investments in other sectors of the economy such as road safety and environmental protection. Methodological features of economic evaluation The basic components of economic evaluation are set out in Fig. 1. The methodological features of economic evaluation have been well documented elsewhere (2,3). Fig. 1. Components of economic evaluation in health care

Table 1 contains a checklist of questions to ask of a published study. The main features of this are as follows. (i) The study question should be clearly stated. In particular, it should be clear whose point of view is being considered when costs and consequences are assessed. (Possible viewpoints are those of the hospital, health care system, government or third party payer, patient and family, or society as a whole.) Normally the viewpoint of society as a whole is preferred. (ii) The alternatives for evaluation should be clearly described. Normally a new health care treatment or programme should be compared with current practice or a widely used existing treatment. Comparisons can be made in terms of health, money or utility. (iii) The effectiveness of the alternatives being compared should be reliably assessed. In the case of health care treatments, the most reliable evidence comes from randomized clinical trials, although some modelling may be required. Module 5.4.1 on economic modelling considers how to adapt clinical trial results to reflect regular practice or to extend results beyond the end of the trial (e.g. to lifetime). V - 40 Learning to live with Health Economics (iv) The costing should reflect the viewpoint adopted. The relevant costs should first be estimated in physical units of resources consumed (e.g. hospital days, visits to a physician) before being valued using a set of prices or unit costs relevant to the setting concerned. In some settings (e.g. hospitals) certain resources are used to produce a number of joint outputs. For example, the heating plant of the hospital services a number of clinical departments. Therefore, when costing a particular clinical intervention or treatment, only some of the resources will be unambiguously attributable to that intervention. Others will be shared resources, sometimes called “overheads”. Therefore, in costing a given treatment, either a method for allocating shared resources (or overheads) is required, or attention should be focused on the additional resources, at the margin, that are required to provide the intervention concerned. (Benefits can also be wider than health narrowly defined: for example, externalities or health and development.) (v) The study should allow for differential timing in costs and consequences, through discounting to present values, and for uncertainty in estimates, either through sensitivity analysis or statistical test. (vi) The presentation of results should include an incremental analysis of costs and consequences, comparing one alternative with another, and comments on the major weaknesses in the study. If comparisons of cost–effectiveness are made with other studies, care must be taken to ensure that they employ similar methodologies. Table 1. A check-list for assessing economic evaluations 1. Was a well defined question posed in answerable form? 1.1 Did the study examine both the costs and effects of the service(s) or programme(s)? 1.2 Did the study involve a comparison of alternatives? 1.3 Was a viewpoint for the analysis stated and was the study placed in any particular decisionmaking context? 2. Was a comprehensive description of the competing alternatives given (i.e. can you tell who did what to whom, where, and how often)? 2.1 Were any important alternatives omitted? 2.2 Was (should) a “do-nothing” alternative (be) considered? 3. Was the effectiveness of the programmes or services established? 3.1 Was this done through a randomized, controlled clinical trial? If so, did the trial protocol reflect what would happen in regular practice? 3.2 Was effectiveness established through an overview of clinical studies? 3.3 Were observational data or assumptions used to establish effectiveness? If so, what are the potential biases in results? 4. Were all the important and relevant costs and consequences for each alternative identified? 4.1 Was the range wide enough for the research question at hand? 4.2 Did it cover all relevant viewpoints? (Possible viewpoints include the community or social viewpoint, and those of patients and third-party payers. Other viewpoints may also be relevant depending upon the particular analysis.) 4.3 Were capital costs, as well as operating costs, included? 5. Were the costs and consequences measured accurately in appropriate physical units (e.g. hours of nursing time,

number of visits to physicians, lost work-days, gained life-years)? 5.1 Were any of the identified items omitted from measurement? If so, does this mean that they carried no weight in the subsequent analysis? 5.2 Were there any special circumstances (e.g. joint use of resources) that made measurement difficult? Were these circumstances handled appropriately? Learning to live with Health Economics V- 41 Exercise 1 Select a published economic evaluation of health care treatments or programmes relevant to your own setting and assess its quality using the checklist given in Table 1. In answer to each of the main ten questions give your response (yes/no/can't tell) and provide a brief commentary on the major strengths and weaknesses of the study. 6. Were the costs and consequences valued credibly? 6.1 Were the sources of all values clearly identified? (Possible sources include market values, patients' or clients' preferences and views, policy-makers' views and health professionals' judgements.) 6.2 Were market values employed for changes involving resources gained or depleted? 6.3 Where market values were absent (e.g. voluntary labour), or market values did not reflect actual values (such as clinic space donated at a reduced rate), were adjustments made to approximate market values? 6.4 Was the valuation of consequences appropriate for the question posed (i.e. has the appropriate type or types of analysis – cost–effectiveness, cost–benefit, cost–utility – been selected)? 7. Were the costs and consequences adjusted for differential timing? 7.1 Were the costs and consequences which will occur in the future "discounted" to their present values? 7.2 Was any justification given for the discount rate used? 8. Was an incremental analysis of costs and consequences of alternatives performed? 8.1 Were the additional (incremental) costs generated by one alternative over another compared to the additional effects, benefits or utilities generated? 9. Was allowance made for uncertainty in the estimates of costs and consequences? 9.1 If data on costs or consequences were stochastic, were appropriate statistical analyses performed? 9.2 If a sensitivity analysis was employed, was justification provided for the ranges of values (for key study parameters)? 9.3 Were study results sensitive to changes in the values (within the assumed range for sensitivity analysis, or within the confidence interval around the ratio of costs to consequences)? 10. Did the presentation and discussion of the results of the study include all issues of concern to users? 10.1 Were the conclusions of the analysis based on some overall index or ratio of costs to consequences (e.g. cost–effectiveness ratio)? If so, was the index interpreted intelligently or in a mechanistic fashion? 10.2 Were the results compared with those of others who have investigated the same question? If so, were allowances made for potential differences in study methodology? 10.3 Did the study discuss the extent to which the results could be generalized to other settings and patient/client groups? 10.4 Did the study allude to, or take account of, other important factors in the choice or decision under consideration (e.g. distribution of costs and consequences, or relevant ethical issues)? 10.5 Did the study discuss issues of implementation, such as the feasibility of adopting the preferred programme given existing financial or other constraints, and whether any freed resources could be redeployed to other worthwhile programmes? V - 42 Learning to live with Health Economics Using economic evaluation in health care decision-making The existence of studies with good methodology is a necessary but not sufficient condition for economic evaluation to be useful in health care decision-making. In addition, it is necessary to identify decisionmaking mechanisms in which economic evidence could, in principle, be used. These are likely to differ from setting to setting, but a number are discussed below, with examples of how the results of economic evaluation have been used. Planning specialist facilities or specific technologies This mechanism is obviously most relevant to the "big ticket" technologies (technologies with a single, large financial commitment, such as major items of equipment) and to those health care systems where central or local government has the power to influence decisions about the location of (say) open heart

surgery units, neonatal intensive care or specialist diagnostic facilities. Although such power exists primarily in predominantly public health care systems, or those with a national health insurance plan, there may also be opportunities to influence decisions in “liberal” health care systems if the development of specialist facilities either requires significant medical research funding or a large number of patients whose bills are paid by the government. There are a number of ways in which economic analysis could contribute to decisions about the number and location of specialist facilities. First, there is the question of the optimum size of such facilities, where information about the shape of the long-term average cost curve would be useful, although presumably the costs (borne by the health care system or patients) of travel to specialist facilities should not be neglected. This suggests examination, by economic analysis, of another choice: that of transporting patients to specialist facilities as an alternative to providing more facilities closer to a greater number of centres of population. Excluding technologies from public reimbursement This mechanism can be applied to both big ticket and small ticket technologies. A number of countries have organizations which decide on the suitability of new technologies for public funding. In addition, health care insurers in some countries are guided by a central organization (e.g. the Sickness Fund Council in the Netherlands). In principle, such agencies could consider evidence on costs together with effectiveness when taking decisions about the size of the health insurance “envelope.” There is evidence that this is beginning to happen. An early example is the Netherlands where the Health Insurance Executive Board has commissioned a number of economic evaluations (4). However, the problems should not be understated. It is important that such bodies have clear remits with respect to considerations of cost–effectiveness. Also, whether or not a particular technology is the most cost-effective approach to the treatment of a patient may often depend on the specific circumstances, such as the severity of the patient’s condition or the diagnostic and therapeutic procedures that have already been applied. In Australia and Canada (Ontario), guidelines have been proposed for the pharmaceutical industry on the preparation of economic analyses to be included in submissions to the government committee deciding on the reimbursement of pharmaceuticals (2). It has to be shown that a new drug gives good value for money before it is listed in the national or provincial formularies. These policy initiatives demonstrate that governments are beginning to take value for money evidence seriously and that guidelines for undertaking studies can be specified. The company wanting to market a product is Learning to live with Health Economics V- 43 increasingly being made to bear the burden of proof that the product is safe and clinically effective and provides value for money. Reforming payment schemes for health care institutions (especially hospitals) One of the most significant reforms over the past few years has been the movement towards prospective reimbursement for hospitals, the most well known scheme being that based on diagnostic related groups (DRGs) operated by Medicare in the United States. Therefore, the calculation of reimbursement rates could take note of evidence on the relative cost–effectiveness of alternative treatment methods for clinical conditions, and this evidence should be more actively disseminated. At present there is perhaps too much of a tendency to set the rates and leave the hospitals to cope with the consequences. This is potentially inefficient, especially if hospitals take decisions based on their own costs and benefits rather than on those of the community at large. This reaffirms the importance of carrying out economic evaluations from a number of viewpoints, including that of society as a whole, so that appropriate incentive structures can be devised for the key actors in the health care system, as mentioned above. Changing payment systems for health care professionals In countries where physicians are paid by a fee-for-service system, or where special additional payments are made for some services, there have been concerns that the payment system leads to inappropriate use of

technology. Some analysts suggest that this system leads to supplier-induced demand. Others are concerned that the rewards to the physician may be relatively higher for time spent using expensive technology than for time spent talking to the patient or counselling. Given these concerns, it is surprising that there has been relatively little study of fee schedules and few attempts to change them. For example, it would be interesting to study whether there are consistent incentives (implicit in the schedules) to encourage physicians to spend their time using expensive technology, whether physicians are consciously aware of these incentives, and whether they influence their behaviour. This would be an important precursor to studies of how the fee schedule could be used more aggressively to change clinical practice in the direction of greater cost–effectiveness, by withdrawing payment for procedures known to be inefficacious and by offering attractive fees for procedures for which benefits are known to exceed costs. The cost–effectiveness approach can also be useful in health care systems where physicians are mainly paid by salary. Developing health care practice guidelines A few years ago the WHO Regional Office for Europe reviewed the schemes operating in a number of countries, with a view to the potential for incorporating economic criteria (5). Two schemes were of particular interest: the Scandinavian model health care programmes, where guidelines are developed for the management of key diseases such as hypertension; and the medical audit schemes developed by the National Association for Quality Assurance in Hospitals in the Netherlands (the CBO), where groups of physicians are provided technical support to review local clinical practices. In both cases there was evidence that economic criteria could be incorporated into the development of guidelines and that attempts were being made to assess the impact of guidelines in terms of cost–effectiveness. There are other examples of economic appraisal being used to help develop guidelines recommended by medical bodies, such as the work by Eddy (6) on cancer screening and that by the Royal College of Radiologists (7) in the United Kingdom on routine skull X-rays for patients admitted to casualty departments with head injuries. Against the background of increasing pressure on health care budgets, there is no reason why more studies could not be encouraged. **The influence of professional V** - 44 Learning to live with Health Economics bodies and medical opinion leaders has probably been under-exploited by those undertaking economic evaluation and those funding health services research. The relevance of economic evaluation to decisions in clinical practice is further explored in a series of articles published in the Journal of the American Medical Association (8,9). These use the example of developing guidelines at the hospital level for the use of tissue-type plasminogen activator (t-PA) in the treatment of acute myocardial infarction. Exercise 2 Consider the decision-making mechanisms outlined above and any others relevant to your own setting. (a) Are

6 there any examples, in your setting, of economic evaluation evidence being used in decisionmaking? If so, how was the evidence used and what was the outcome? (b) Do you see any greater potential for using economic evaluation evidence in your setting? What are the major barriers to the more widespread use of economic evaluation and how could these be overcome? Economic evaluation of health-producing measures in different sectors of the economy Modules in Chapter 2 discussed the linkages between health, health care and the wider economy. It is clear from this discussion that activities in other sectors can either produce or reduce health. Therefore, if the objective is to improve health, it would be unwise to concentrate solely on activities in the health care sector. It might be more efficient, at the margin, to invest in health-promoting measures outside the health care sector. In the United States, Tengs et al. (10) have begun to address this issue. They produced a ranking of more than 500 lifesaving interventions, ordered in terms of their incremental cost per life-year saved. These included not only interventions in the health care sector but others in road safety, environmental protection and occupational health. An abridged version of their

data is given in Table 2. It can be seen that the implied price to save a life-year varies greatly between different interventions. Exercise 3 Consider the data in Table 2. (a) What are the major advantages and drawbacks of this type of analysis? In the event that the drawbacks outweigh the advantages, what type of analysis would you propose instead? (b) Assuming, for a moment, that the data in the Tengs et al. analysis apply to your setting, what mechanisms would have to be put in place to ensure a more rational use of resources (in improved health) across sectors? Learning to live with Health Economics V- 45 Economic evaluation: linking theory and practice This module has discussed both the methodological features of economic evaluation and its potential for use in decision-making. The following conclusions can be drawn. (i) Health care decision-making inevitably involves a number of social, economic and political considerations. Assessments of the cost–effectiveness of alternative treatments and interventions will, therefore, only ever form part of the overall decision. (ii) Despite this modest aspiration for economic evaluation, it is nevertheless important that the results of studies are reliable. The methodological principles outlined in Part 1 of this module should, therefore, be adhered to. (iii) In addition to adhering to sound methodological principles, economic evaluations need to be made relevant to the health care decision-maker's own setting. This issue is discussed further in Module 4.3.1 on the development and diffusion of health technology. (iv) Several mechanisms for using economic evaluation in health care decision-making have been discussed. Although several instances of the use of economic evaluation can be cited (e.g. in decisions about the reimbursement of pharmaceuticals in Australia), in most cases the potential for use is greater than actual use. Some of this unfulfilled potential may be due to the problems with economic evaluation methodology discussed above. However, the main reason for lack of use is that decision-making procedures in health care do not easily incorporate evidence of any description. Therefore, those in decision-making positions consulting this module should reflect on the decision-making procedures operating in their own countries in order to assess the potential for incorporating economic and other forms of evidence. Intervention Cost/life-year (US $) Fatal injury reduction Mandatory seat belt use and child restraint law 98 Smoke detectors in aeroplane lavatories 30 000 Widen shoulders on rural two-lane roads to five feet versus two feet 120 000 Seat belts for passengers in school buses 2 800 000 Flammability standard for children's clothing size 7-14 15 000 000 Toxin control Reduced lead content of gasoline from 1.1 to 0.1 grams per leaded gallon 50 Ban asbestos in brake blocks 29 000 Benzene emission control at pharmaceutical manufacturing plants 460 000 Ban asbestos in thread, yarn, etc. 34 000 000 Radionuclide emission control at coal-fired industrial boilers 260 000 000 Health care Measles, mumps and rubella immunization for children 50 Beta-blockers for myocardial infarction survivors 850 Postsurgical chemotherapy for premenopausal women with breast cancer 18 000 Annual mammography for women aged 55-64 years 110 000 Sickle cell screening for newborns 65 000 000 Table 2. Cost per life-year of life-saving interventions in different sectors V - 46 Learning to live with Health Economics References 1. MARK, D.B. ET AL. Cost-effectiveness of thrombolytic therapy with tissue plasminogen activator as compared with streptokinase for acute myocardial infarction. New England journal of medicine, 332(21): 1418–1424 (1995). 2. DRUMMOND, M.F. ET AL. Methods for the economic evaluation of health care programmes, 2nd ed. Oxford, Oxford University Press, 1997. 3. GOLD, M.R. ET AL., ed. Cost-effectiveness in health and medicine. New York, Oxford University Press, 1996. 4. HAAN, G. & RUTTEN, F. No cure, no pay: an acceptable way of financing fertility treatment? Health policy, 13: 239–249 (1989). 5. Guidelines for health care practice in relation to cost–effectiveness. Copenhagen, WHO Regional Office for Europe, 1981 (Euro Reports and Studies No. 53). 6. EDDY, D. Screening for cancer:

theory, practice and design. Englewood Cliffs, NJ, Prentice-Hall, 1980. 7. ROYAL COLLEGE OF RADIOLOGISTS. Costs and benefits of skull radiography for head injury. Lancet, ii: 791–795 (1980). 8. DRUMMOND, M.F. ET AL. Users' guides to the medical literature. XIII: How to use an article on economic analysis of clinical practice. A: Are the results of the study valid? Journal of the American Medical Association, 277(19): 1552–1557 (1997). 9. O'BRIEN, B.J. ET AL. Users' guides to the medical literature. XIII: How to use an article on economic analysis of clinical practice. B: What are the results and will they help me in caring for my patients? Journal of the American Medical Association, 277(22): 1802–1806 (1997). 10. TENGS, T.O. ET AL. Five-hundred life-saving interventions and their cost-effectiveness. Risk analysis, 15(3): 369–389 (1995). 5.4.1 Economic modelling and forecasting Reiner Leidl6 Key messages • Economic models can support decision-making and policy development. • Transparent models structure problems, make explicit the assumptions used, and explain the consequences implied. • Decision models help a rational decision-maker to choose the best strategy among clearly defined alternatives. • Scenario models provide an approach to reasoning in situations characterized by uncertainty, complexity and even lack of data. Based on "what-if" reasoning, they describe possible developments. Disease models describe epidemiological and economic processes that are linked to disease and health intervention in populations. Both types of model can provide insight for policy-makers. • Econometric models describe a set of statistical techniques for quantitative empirical analysis. They serve analytical purposes, for example by measuring the influence of determinants on a target variable or by forecasting the variable's values. • In order to ensure high-quality support for decision-makers, both the methods and the results of a model must be used properly and adequately. To achieve this requires methodological expertise, expertise in the health problem investigated, and expertise in supporting decisions. Tutors' notes Key learning objectives of this module are: • to recognize the relevance of modelling in the support of decision-making in health care, the quality criteria for good modelling approaches, and the limitations of modelling providing information to decision-makers (General remarks); 5.4 Modelling 6 This module was prepared by Professor Reiner Leidl, Department of Health Economics, University of Ulm, Germany (e-mail: Reiner.Leidl@mathematikuni-ulm.de). The author is grateful to the members of the WHO Working Group on the Development of Health Economics Training Modules and to the staff members of the Department of Health Economics for comments on earlier versions of this module. • to understand how a simple, well defined and static economic decision problem can be quantitatively formulated, how its result can be calculated and how it can be interpreted for use in decision-making (Decision analysis); • to develop an idea of how complex decision problems in health care and in health policy can be simplified and quantitatively tackled by modelling, and how models can then be further extended in a module-based approach (Scenario analysis and disease modelling); • to develop an idea of the role of traditional statistical modelling techniques (i.e. of econometrics in the case of economic issues) in analysing data and testing theoretical hypotheses on the basis of well established quantitative methods (Econometric models). For a better understanding of the various modelling approaches and their possible limitations when used to support decision-making, it is recommended that participants discuss the practical examples included in the text. Emphasis should be put both on the technical aspects of modelling and calculation, and on the implications of using this information for decision-making. It is important to stress all critical aspects of the modelling approaches, but it should also be considered on what information decision-making is based when modelling is not used. Together with the examples, it is also suggested that participants should try to solve the exercises, the main results of which are given

at the end of this module. Tutors are further recommended to consider the texts suggested in the references and further reading (if they are not covered already). General remarks on economic modelling This module is intended to give readers an appreciation of a broad range of quantitative methods in economic analysis. Modelling issues are investigated from an applied perspective only, with an emphasis on support for decision-making in health care. Accordingly, readers who are not familiar with the formal side of quantitative analysis may develop an understanding of the expertise required when decisions are to be supported by sound scientific work. A formal treatment of the quantitative methods introduced is beyond the scope of this paper. Readers are, however, invited to consider the simple examples (and the exercises) presented in this module in order to develop a more concrete understanding of the methods underlying economic modelling results. A first understanding of modelling and its potential and limitations is best achieved when working with its tools. To some, modelling economic issues may seem to be one of the folklore dances celebrated in academic ivory towers. But consider the following questions. Will the general use of a new treatment, for example the eradication of Helicobacter pylori in every dyspeptic patient, lower or increase health care costs? What will be the impact of an ageing population on health care financing in the coming decades? Which are the most important determinants of health care expenditure? The answers to such questions may be of considerable relevance to decision-makers in the health care system. The issues at stake may, however, be complex, involve long-term developments, and offer some data seemingly suitable for analysis. Short consideration quickly reveals that the immediate responses to the above questions can only rely on “off the cuff” estimates, the basis of which remains unclear. Experiments and empirical analysis of their results can hardly be conducted with these types of problem. Thus, cases exist where modelling may be the only realistic alternative left for scientifically-based reasoning. Rational decision-making should be based on the best available evidence. Modelling is a transparent and rational way of reasoning in complex situations in which other appropriate evidence is not available. There are also limitations to modelling approaches and, in consequence, to the use of their results. Yet before completely disregarding such approaches because of their limitations, it should Learning to live with Health Economics V- 49 be considered on what type and on what quality of information decisions can be based when modelling is not used. Models may produce extra information for decision-makers which can best be used both by taking into account its limitations and the evidence available otherwise. There is a broad range of modelling methods that can be used on health care issues, and there are many different types of economic decision at different levels of the health system which can be supported by modelling. Whether or not a modelling approach is appropriate to inform a decision cannot be generally stated but will depend on the type of result available and on the decision at stake. The results of modelling aim to inform decision-makers on the economic aspects of the problems needing their decisions, for instance the costs and effects involved in alternative treatment options, the capacity of hospitals beds needed, or the major determinants of a policy parameter such as health care expenditure. Several major types of approach to modelling will be introduced in this module and examples of their application shown. Explanation, prediction and simulation are the main general purposes of economic models. Even before explaining, predicting and simulating, however, modelling produces some important advances. Models require the investigator to structure a problem clearly, to make the precise question investigated transparent and to explain the methods used. Application of a model must include a section on the strengths and on the weaknesses of the approach chosen. Models thus clarify the way and the methods by which answers to complex problems are found. High-quality models do so in a way that is fully

understood by the model’s audience. As with other approaches used to inform decision-making, models may have some disadvantages. They may distract the analyst or the reader to technical issues, and they may move the audience away from the issue at stake. Bad models may miss the main relevant points to be investigated. Even worse, some models may make assumptions that are too simple to reflect reality, and may thus suggest policy conclusions drawn from an inadequate analytical framework. In addition to all these problems, models may still give the impression of sound science due to the formal elegance of the approach they present. Accordingly, decision-makers should be well aware of the quality of the models available – which, in the end, they can use or disregard in their decisions. Besides the general pros and cons of modelling, there are a number of technical aspects which must be considered in approaches to modelling. A highly salient starting point is whether or not the model’s theoretical structure appropriately reflects the underlying causal structure of the issue investigated. This theoretical structure must be set up before a quantitative analysis is conducted – there are statistical search techniques that help to identify the best theoretical structure for a model. Accordingly, it needs to be decided whether the purpose of the model is to explore the best theoretical structure, or whether it is empirically to test a well founded theory. The latter tends to be of more interest to decision-makers than the former (which may feature an earlier phase in scientific work). Models should clearly state their purpose and justify their theoretical basis. Complex models may consist of a number of modules which should be consistent with respect to the definitions and variables that they employ. In any case of empirical modelling, the quality of data and indicators used must be carefully assured. This includes an investigation of criteria such as validity, reliability, completeness and representativeness. Decision-makers should regard these quality criteria when evaluating the information which a model contributes. In general, the model should be implemented as transparently as possible. It should thus clearly state its structure, the methods used, data input, analytical procedures, results and interpretation. Assumptions must be discussed and well founded. Results need to be tested. In stochastic models V - 50 Learning to live with Health Economics (which contain probability elements), this can be achieved by calculating and reporting confidence intervals. In deterministic models, the assumptions used should be varied within plausible ranges. Such an exercise is called sensitivity analysis. This analysis can be conducted with individual variables, or with combinations of more than one variable, of a model. In any case, the variables selected and the ranges calculated in sensitivity analysis should be well justified. The effects of these variations on results should be carefully investigated and reported. Decision-makers should be aware of the range of uncertainty surrounding the information basis of their decisions. Last but 6 not least, it should be clearly stated for which decision context the model’s results are considered useful, and which restrictions can be foreseen. Some models may directly support the choice between alternative decisions, and some may be more suited to guide policy-makers through situations which may have to be tackled. In general, decision-makers must check whether or not the approach of a model is appropriate and useful in the context where the decision is to be taken. As an example of study focus, the cost–effectiveness resulting from a decision model that takes into account the age structure of an insured population could be more useful to a health insurer than results derived from an experimental study that would render harder evidence but feature patients of a different age structure. Decision-makers must assess the appropriateness of models’ results for their intended uses. There may be situations where models are the only transparent and rational way to deal with complex issues. In order to assure the methodological quality of models and their suitability to the issue being investigated, modelling approaches should be confronted with the same scientific rigour as the traditional empirical analysis of an experiment. Both in the analysis

of experiments and in modelling, careful consideration must be given to the design issues, appropriate structure of analysis, and quality of data and indicators. Decision-makers can use the checklist in Table 1 for an instant control of the information provided by a modelling approach. They should be aware that a competent scientific assessment of a specific model would require detailed technical expertise which cannot be gained from this overview. What can be gained, however, is a recognition of the important issues that need to be assessed and managed when supporting decisions on the basis of economic models. Table 1. Eight checkpoints for decision-makers looking at modelling approaches 1. Is the model adequately designed to contribute to the issue of interest? 2. Is the model backed by relevant theory and by a confirmed structure? 3. Does the model use high-quality data and indicators? 4. Are individual modules linked with each other consistently? 5. Are model design, methods, inputs and analyses well documented? 6. Is uncertainty dealt with appropriately? 7. Is the model analysis appropriate for the decision context? 8. How does the quality of model results compare with other sources of evidence? In sum, models must be implemented properly and used adequately. In order to assess the methods and use of models in health care, a decision-maker needs methodological expertise, expertise in the health problem investigated, and expertise in how to support decisions by model results. Given these preconditions, models can significantly improve the state of information available, and support decisionmaking in a transparent and rational way. Learning to live with Health Economics V- 51 The further structure of this module There are, of course, many different problems and many different types of model. Health care models can be directed at individual patients or at populations. Static models focus on one point in time, dynamic models integrate time as a variable and consider the course of the model over time. Complex models may describe and integrate many different areas relevant to a problem, whereas simple models may concentrate on the core issue only and disregard other aspects. From the wide variety of models, this module introduces three major modelling approaches and briefly describes the basic technical aspects of each. This is followed by a simple exercise. The section on decision analysis introduces the quantitative analysis of a static decision problem. The example used is a simple decision-tree model describing the choice of a medical intervention from an economic point of view. The section on scenario analysis and disease modelling discussed more general forms of models. A simple example deals with demographic impact on costs and financing in a health system. The final section deals with traditional econometric analysis. This method is widely accepted for analysis and prediction. The example used refers to an often investigated problem, the explanation of the level of health care expenditure. Decision analysis Decision analysis is directed at the best choice between clearly defined decision alternatives. It is concerned with the detailed and transparent description of all parts of a decision. This includes the events that can occur, the impact of these events, the type and number of relevant decision-makers, their preferences, and the rules that are being applied in the decision-making process. When such an approach is applied in situations of uncertainty, with complicated sequences of events, multivariable preferences and the participation of several decision-makers, analysis can become very complex. Presented here is a simple model which incorporates the basic idea of decision analysis: a decision tree. A simple decision-tree model is characterized by a sequence of events which occurs only once and does not include any feedback loops. More complicated types of model where, for example, cohorts of patients pass through different stages of disease but may recur to earlier stages, are not dealt with here. In a decision-tree model, the problem to be addressed must be clearly defined. This includes specification of the choices that can be made, the possible events and sequences of events that can occur, the probabilities of events occurring, and the impacts of

interest that are linked to these events. In economic evaluation, these impacts would be the effects on costs and health. By computing the probability-weighted outcomes of the various possible choices ("strategies"), the best strategy (aiming, for example, at minimum cost per health effect gained) can be chosen. Many assumptions may be incorporated into the decision tree. In order to assess the impact of assumptions on results, it is strongly recommended that a variety of assumptions be investigated up to possible extreme values. However, the ranges of assumptions investigated in this so-called sensitivity analysis should be well justified. Decision-theoretical models have the potential to combine the best available data in order to enable rational comparisons of choices in complex decision situations. They have been criticized because they are often not based on data measured in experiments, but on (sometimes crude) assumptions. It has been recommended that these models should be used in cases where experiments with direct measurements are not feasible. **As far as possible, data from experimental studies should be used as inputs to decision models. V - 52 Learning to live with Health Economics Example 1:** A decision tree Assume that, in a particular population, a disease can be dealt with either by a new drug therapy with some severe side effects, or by doing nothing. Doing nothing incurs a 2% mortality from the disease, while just one fifth of the survivors regain full health. With drug therapy, mortality increases to 3% due to side effects, but four fifths of the cases will be completely cured. For those who achieve full health, another 20 years of life can be expected on average. Those surviving but not being fully cured remain chronically ill and have a life expectancy of 10 years. Drug therapy costs US $28 500. These data can be used to support a decision on the provision of the drug in a health care system. It is estimated that for quite a number of the currently provided interventions in this system, the costs of a life-year gained by medical care exceed US $5000. Given this, can a clear suggestion be made as to whether or not this new drug therapy should be provided? Starting with the above data, the decision problem can be exactly structured according to the decision tree in Fig. 1. The events following the choice for drug intervention or for doing nothing are reported in terms of mortality and survival, the latter differentiated by survival in full health and survival in the state of chronic illness. The probabilities of each event are reported. The total probability of an event at the end of a branch can be calculated by multiplying the probabilities of the events passed through retrospectively from the end of the branch back to the root of the tree, i.e. the starting choice on whether or not to use the drug. Fig. 1. A decision tree for the economic evaluation of a drug treatment Drug therapy Survived (97%) Survived (98%) Healthy (20%) Ill (80%) Ill (20%) Decision node Dead (2%) Healthy (80%) Dead (3%) Result: LE=20 years, C=$28 500 Result: LE=10 years, C=$28 500 Result: LE=0 years, C=$28 500 Result: LE=20 years, 6 C=$0 Health problem present Result: LE=10 years, C=$0 Result: LE=0 years, C=$0 Doing nothing Chance node Learning to live with Health Economics V- 53 Multiplying total probabilities with the outcome (costs and effects) linked to each branch, the total outcomes for each choice can be summed up. Thus, the expected outcome for each strategy can be calculated. The additional life expectancy (D LE) in years which is gained by drug therapy and the additional costs (D C) incurred can thus be computed.

Together, the two indicators render an incremental costper-life-year-gained ratio for the drug intervention, as opposed to the option of doing nothing:

Δ LE = [0.97*(0.8*20+0.2*10)+0.03*0] years – [0.98*(0.2*20+0.8*10)+ 0.02*0] years = 5.7 years Δ C = US $28 500 Δ C/Δ LE = US $5000 per life-year gained.

As the cost-per-life-year-gained does not exceed the cost accepted in a number of existing interventions, the model's result would not go against a provision of this

treatment from an economic point of view. However, the assumptions in the model would have to be discussed in detail and would have to be varied in order to find out how stable this result is. Another aspect might be to investigate the impact of therapy on health-related quality of life. For further detail on economically assessing medical intervention, the reader is referred to Module 5.3.1 on economic evaluation. Exercise 1. Economic modelling to minimize treatment cost During the 1990s, there was intense discussion on how to use the newly discovered drug treatments to eradicate Helicobacter pylori (hp). Hp is thought to be an important determinant of dyspepsia, peptic ulcer and even gastric cancer. Among the issues discussed is the question of whether eradication treatment should be generally offered to all dyspeptic patients found to be hp-positive, irrespective of whether there is evidence of further disease. A previous study, which describes a simple decision-tree model and a restricted economic evaluation (1), has reported the following data (only the branch of hp-screening and follow-up treatment is modelled and some assumptions have been adapted to ease computations): A test that perfectly identifies all hp-infected individuals costs US $50. Of the dyspeptic patients tested, 30% are expected to be hp-positive. Using a drug therapy costing US $218 on those testing positive, hp will be eradicated in 60% of cases. Eradication prevents chronic dyspepsia and peptic ulcer in 10% of the patients and gastric ulcer in 0.1% of the patients (and has no preventive effect in the rest of the patients). Treatment costs are estimated to be US $5000 for chronic dyspepsia, US $7000 for peptic ulcer and US $30 000 for gastric cancer. Given these data, and cost minimization as the aim, should the hp-screening and treatment strategy be introduced or not? What limitations do you see in the underlying calculation? Scenario analysis and disease modelling Decisions regarding health policy sometimes have to be taken in situations of significant uncertainty, complexity, and scarcity of data and lack of evidence about interventions. The early phase of the global HIV epidemic was one example. Scenarios may provide a helpful basis to deal with such situations. Scenario analysis is characterized by “what-if” reasoning. Using a variety of assumptions, possible developments are transparently described. Developments mostly concern the future but V - 54 Learning to live with Health Economics sometimes also refer to the empirically not known, or not well understood, past or present. When applied to health care systems, scenario analysis often features modelling at the population level, including a description of the population and its health problem, and usually involves the investigation of future trends or alternative interventions. Disease models are usually applied to difficult health problems. Disease models require: (i) a sub-model on the epidemiological spread of the disease in the population, for example a risk factor model in a stochastically emerging disease, or a model of spread for an infectious disease; and (ii) a sub-model on progress of the disease dealing with the future course of the disease in an individual after onset; this typically includes both the natural history of the disease (i.e. its course without any intervention) as well as its development following health care interventions. Scenario analysis and disease modelling may become quite complex. They usually require detailed knowledge of the problem investigated, such as the determinants of future need for physicians or the impacts on health of early interventions in HIV infection. In the following example, a simple scenario analysis is described. Important aspects, or modules, for more comprehensive analysis are then looked at. Example 2: Scenario analysis of demographic impact on health care financing The populations of a number of countries are ageing. To a significant extent, this results from declining fertility rates. Changes in size and composition of a population will influence health care utilization as well as costs. Furthermore, a common way of financing health care is the pay-as-you-go system: the working population has to earn the income from which care is financed for the total population, including care of children and the elderly. Scenario analyses of

future health care utilization, cost and financing may provide highly salient information for health policy-makers. Consider the following fictitious population (Table 2) of 106 million people, which experiences a 10% reduction in births over the period 1998–2018. In the simplified example, health care costs are indicated for children (0–15 years), the working population (16–64 years) and pensioners (65+ years). According to the pay-as-you-go system, each member of the working population has to contribute US $1925 (= total costs/working population) to health care in order to cover the costs incurred in this population. Substituting population figures for 1998 by population projections for 2018 provides the reference scenario for future costs and contributions. Everything else is kept constant in this exercise – epidemiology, health care technology, capacity for care, and the preferences and behaviour of all participants. These assumptions are very restrictive, but the factors listed cannot be predicted simultaneously for the next two decades. This leaves the simple methodology introduced as a starting point that indicates the "pure" demographic effect (2). Extension of the analysis could involve changing one or more of the above listed factors in alternative future scenarios. Exercise 2 Start from the scenario described in Table 2. What is the 20-year growth rate of contributions? What impact would the inclusion of technical progress have on this rate? In order to quantify this impact, assume the following alternative scenarios resulting from increasing costs of health care technology over the two decades (other things being equal**):**

(i) all health care costs in the population grow by 35%, which corresponds to a yearly growth rate of a little more than 1.5%; and (ii) health care costs for children and the working population grow by 35% but those for the elderly grow by 70%, the latter corresponding to a yearly growth rate of almost 2.7%. In the light of the problems that emerge from scenarios such as those described above, it is often suggested that a capital funding system would be a better alternative. In this approach, total health care costs for each individual over his or her whole lifetime are calculated and then covered by a constant premium rate over the whole lifetime. From a modelling perspective, is it easy and realistic to choose this option? In example 2, projections of a "demographic module" have been combined with figures from a current "cost module". Two assumptions regarding changes in technology and, subsequently, costs provided the basis for further scenarios. Modelling other than demographic and cost changes may require the use of additional modules, such as an "epidemiology module" when investigating the effect of changes in disease incidence and prevalence; a "health care utilization module" when investigating the impact on health care capacities; or an "effects on health module" when analysing cost–effect relationships at the population level. These five modules are listed in Table 3. This table also includes examples of the relevant data and

indicators that must be identified when empirical information is collected for use in the model. One important requirement in scenario analysis and disease modelling is that the different models to be combined match with respect to their theoretical scope, technical definition of indicators, and representativeness of the data used. The five modules may be used in quite different combinations, and may be part of a variety of modelling approaches. Table 4 gives an overview of the main types of modelling approach, although it does not claim to be exhaustive. The first three types show that economic modelling of the impact of demographic change can be directed at health care needs, at the development of costs, or at the description of health care costs and effects. For the next three types of model, only the cost modelling type is shown: • epidemiological models emphasize the relevance of changes in disease patterns by including an epidemiological module; • trend models focus on technological change and include projections of what current costs per case will be in the future; and • disease models concentrate fully upon the developments in a cohort of patients once a disease has already started, while leaving out the demographic module.

Table 2. Demography, health care cost and financing in a population, 1998 and 2018 Age groups Population Cost/capita Total cost Contribution (years) in millions in US $ in billion US $ in US $ year 1998 0–15 10 1 000 10 – 16–64 80 1 000 80 1 925 65+ 16 4 000 64 – year 2018 0–15 9 1 000 9 – 16–64 66 1 000 66 2 470 65+ 22 4 000 88 – V - 56

Learning to live with Health Economics Table 3. A conceptual approach to scenarios and disease models in 5 modules Theory population models risk factor models, development of disease models concepts of care appropriate to need and to the health care system costs according to measurement concepts from different perspectives clinical endpoints, survival modelling, quality of life and utility concepts Data population statistics, socioeconomic data register data, epidemiological and clinical studies data on diagnoses, services and prescriptions from insurers and providers expenditure data from insurers' data bases, cost data from providers' accounting systems data from clinical or observational studies Indicators size of population by sex and age groups incidence, prevalence, progression of disease, mortality total cost per case or per period cases prevented, life years gained, QALYs produced diagnosisspecific capacities of care, frequency and intensity of services, length of stay Module 1 Demography Module 2 Epidemiology Module 3 Health care Module 4 Costs Module 5 Effects

Table 4. Modules used in different types of scenario or model Note: "Projected" means that a description of the future course of the module is made, "current" means that the state as of today is used. a utilization b general and clinical epidemiology c "Current" means that the state as of today is used d General and clinical epidemiology Type of modelling (1) (2) (3) (4) (5) approach Demography Epidemiology Health carea Costs Effects projectedb projected projected projected projected or current projected projected currentc currentd current current current current current a) demographic projection of health care needs projected b) demographic projection of costs c) demographic projection of costs and effects d) epidemiological projection of costs e) trend cost scenario f) disease model of costs Learning to live with Health Economics V- 57 Within all the types of modelling presented, comparison of a basic scenario with a further alternative is possible, e.g. comparing intervention versus no intervention, or new intervention versus old intervention. The models introduced can also be considered starting points for further analysis. Exercise 2 referred to models type (b) and (e) in Table 4, but combined these with the financing issue in the context of pay-as-you-go systems. Other examples can easily be identified and discussed using the framework of Table 4. Scenario analyses do not claim to generate predictions in the sense in which statistical extrapolations of time series data do. Rather, scenarios link possible sets of assumptions with the consequences these assumptions imply within the modelling framework. Scenario models have, however, been criticized because they are often hard to validate. Another problem is that their construction or the data they include may not feature the scientific rigour of other methods. Disease models intend to describe, analyse and predict the epidemiological and economic processes linked to disease and health care in populations (3,4). First-quality standards that may apply for this type of modelling have recently been developed (see Sonnenberg (5) for a focus on decision-type models). In general, the scientific rigour of scenario analyses and disease models can be assured by applying traditional concepts for the testing of scientific methodology: consistency of the theoretical approach; validity and reliability of data and indicators; matching of the different modules that are combined; and representativeness of the data used for the decision context that is to be

supported by the scenario analysis. Econometric models Econometrics has been defined as the science and art of building and using models that quantitatively reflect the real world. As with any other modelling, econometric models should be based on good theory. Econometric methods comprise a large set of models for empirical analysis and forecasting, such as simple and multiple regression analysis, simultaneous equation systems, time series analysis and several other types. The data useful for sound econometric analysis must fulfil a number of requirements such as sufficient number of observations, certain distributional properties, and completeness of data in multivariable models. An important group of econometric models is explanatory models. These models relate a dependent variable, the variations of which are to be explained, to one or more independent variables, whose variations are to explain that of the dependent variable. After an econometric model has been run, a number of assumptions must be checked, for example the properties of the variable gathering up the unexplained variability, the so-called “error term”. This term should not be correlated with the independent variables. Another example is that two (or more) independent variables should not be correlated with each other, a case called (multi-) colinearity. Furthermore, specification tests can be used to assess the appropriateness of the model structure. Scientifically, econometrics is probably the most developed field among the methods discussed in this module. In practice, however, this means that skill and thought are necessary when using econometrics. In a number of situations, the conditions required for this type of modelling may not be met. The appropriateness of what is being modelled thus has to be assessed in practice. In some situations, decision-makers may ask for faster information support than an econometric model may be able to render on the basis of the data available. For example, how much burden will the financing of a new drug treatment put on our budget, and will it be worthwhile? **For such questions, models of the type discussed earlier could be considered. V - 58 Learning to live with Health Economics In the following discussion a very simple example is considered based on regression analysis.** The emphasis of the example is on understanding the approach to the analytical problem and the impact of results on decision-making at the macro-level of a health care system. Technical issues of the analysis are not dealt with here. Example 3: Explanation of health care expenditure A number of econometric studies have tried to explain health care expenditure at the level of the health care system. All the studies include income as a determinant of health care expenditure. In theory, it seems intuitively plausible that income will explain – at least in part – the level of health care expenditure. In addition, many other determinants have been considered, for example, variables indicating the organization of the health care system (e.g. whether or not it features a national health service, or remuneration by a 6 budgeting or a fee-for-service system), or factors such as consumption of alcohol and tobacco. In many studies, the approach to explain health care expenditure is to run a regression of national per capita health care expenditure (HCE, as the independent variable) on income, expressed as gross domestic product per capita (GDP, as the dependent variable). The typical units of observation in such analyses are countries, thus featuring an international cross-sectional analysis. Fig. 2 shows an example of a basic result found in many studies. This shows the observation points for HCE and GDP for the twelve member states of the European Community in the year 1990 (data from the OECD health database as of July 1997). The econometric model uses a frequently found specification, employing the logarithms (ln) of HCE and GDP instead of baseline values (6). The regression line minimizing distance to the points of observations has a slope of 1.43. For the model specification used and the set of countries observed, this means that if the level of GDP grows by 10%, the level of HCE will increase by 14.3%. The slope is thus called the income elasticity of health care expenditure. In this model, 84.4% of the total variance of HCE is explained by GDP. Looking at

the development of baseline per-capita income, historical observation over the last forty years shows that it took poorer member states between less than one up to more than two decades to reach the mean income in the European Community which existed at the beginning of an observation period (6). Exercise 3 Discuss the appropriateness of the above econometric analysis. What conclusions would you draw from the results reported concerning the following three issues: • the determinants of health care expenditure • the possibility of cost-containment • the impact of economic growth on the health care system?

Learning to live with Health Economics V- 59 References 1. Consensus conference on economic modelling. Pharmacoeconomics, 17(5): 443–513 (2000). 2. LEIDL, R. Health economic issues relevant to countries with aging populations. World health statistics quarterly, 45(1): 95–108 (1992). 3. LEIDL, R. European integration, economic growth, and health care expenditure. In: Leidl, R., ed. Health care and its financing in the single European market. Amsterdam, IOS Press, 1998 pp. 38–58 (Biomedical and Health Research Series, Vol. 18). 4. POSTMA, M.J. ET AL. Hospital care for persons with AIDS in the European Union: assessment of current and future impact controlled for severity stages. Health policy, 41(2): 157–176 (1997). 5. SONNENBERG, A. Cost-benefit analysis of testing for helicobacter pylori in dyspeptic subjects. American journal of gastroenterology, 91(9): 1773–1777 (1996). 6. WEINSTEIN, M.C. ET AL. Forecasting coronary heart disease incidence, mortality, and cost: the coronary heart disease policy model. American journal of public health, 77(11): 1417–1426 (1987).

. V - 60 Learning to live with Health Economics Further reading To the author's knowledge, there are no textbooks on the methodology of economic modelling in health care which cover all three approaches presented here. Suggestions for some further reading for each approach are given below. 1. On decision theory, there are a number of general textbooks. Special reference to health economics is found, for example, in: KEELER, E. Decision trees and Markov models in cost–effectiveness research. In: Sloan, F.A., ed. Valuing health care. Cambridge University Press, 1995, pp. 185–205; RITTENHOUSE, B. Uses of models in economic evaluations of medicines and other health technologies. London, Office of Health Economics, 1996. 2. No comprehensive methodological textbook is, unfortunately, available on scenario analysis and disease modelling. An instructive methodological overview of scenarios to support health policy, using the example of AIDS, is found in: JAGER, J.C. & VAN DEN BOOM, F.M.L.G. Scenario analysis, health policy, and decision-making. In: Kaplan, E.H. & Brandeau, M.L. Modelling the AIDS epidemic: planning, policy, and prediction, 1994, pp. 237–252 (Chapter 13). Important elements of constructing disease models come from decision analysis, dynamical mathematical modelling, and basic epidemiological methods, each a field for which general textbooks exist. 3. On econometrics, there are numerous textbooks available. A very brief, nice overview on statistical tools for health economics, including the econometric ones, is found in: FOLLAND, S. et al. The economics of health and health care, 2nd ed. Englewood Cliffs, Prentice Hall, 1997 (Chapter 3). A comprehensive introductory text not directed at health care is: PINDYCK, R.S. & RUBINFELD, D.L. Econometric models & econometric forecasts, 3rd international edition. New York, McGraw-Hill, 1991 (4th edition forthcoming). Quantitative solutions to the exercises Exercise 1: The screening and treatment strategy for helicobacter pylori saves US $106. This is derived by multiplying monetary outcomes and probabilities in the decision tree, progressing backwards from the ends of the branches to the root of the tree: – US $50 + 0.7 * $0 + 0.3 * {- US $218 + [0.4 * US $0 + 0.6 * (0.1 * US $5000 + 0.1 * US $7000 + 0.001 * US $30 000 + 0,799 * US $0)]} = $106.

Exercise 2: The baseline 20-year growth rate of contributions in the table (1998: US $1925.0; 2018: US $2469.7) is 28.3%. Adding technical progress raises the growth rate of contributions to 73.20% in case (i), referring to a 2018 contribution of US $3340.9), and to 97.44% in case (ii), referring to a 2018 contribution of US $3800.8. The average yearly ("compound") growth rates are 1.25% for baseline, 2.78% for case (i) and 3.46% for case (ii), respectively. Health Economics as a Tool for Leaders David A. Gunnarsson, C. Selby Smith and H. Zöllner WHO Regional Office for Europe Copenhagen, 2003 Key Words HEALTH ECONOMICS DELIVERY OF HEALTH CARE – economics HEALTH POLICY – economics SOCIOECONOMIC FACTORS HEALTH SERVICES ACCESSIBILITY HEALTH CARE REFORM COST–BENEFIT ANALYSIS – methods OUTCOME ASSESSMENT (HEALTH CARE) PROGRAM EVALUATION – methods FORECASTING TEACHING MATERIALS

Health Organization in preference to others of a similar nature that are not mentioned. Errors and omissions excepted, the names of proprietary products are distinguished by initial capital letters. The World Health Organization does not warrant that the information contained in this publication is complete and correct and shall not be liable for any damages incurred as a result of its use. The views expressed by authors or editors do not necessarily represent the decisions or the stated policy of the World Health Organization. EUR/03/5042783 Contents

.. **Health Economics as a Tool for Leaders 1 The WHO Regional Office for Europe has published on the Internet the book Learning to live with health economics (hereafter known as "the book"),** containing 25 health economics study modules, most of which are 15–20 pages long.1 The book has been prepared to assist the following groups of people to become more familiar with the importance of health economics in health care: • the highest level of policy-makers • administrators and managers • health care professionals • media commentators, health lobbyists, senior officials in other sectors, etc. The highest level of health care decision-making comprises ministers of health and their most senior officials. These are the people who establish appropriate parameters for decision-making by practitioners and health care administrators, manage intersectoral relationships and obtain adequate resources for the health sector. They are, however, extremely busy and are most unlikely to work systematically
 through the full book. Given the importance of this group and the benefit they could derive from familiarity with health economics concepts, tools and ways of thinking, WHO has produced this abridged version of the book for their use. Entitled Health economics as a tool for leaders, 2 it is organized in two parts: • part 1: materials for private study • part 2: materials for tutors to organize a one-day seminar. The two elements are separate, but it may be that senior decision-makers who have used the materials in part 1 will conclude (at least in some cases) that interaction with colleagues and a high quality resource person would justify subsequent participation in a one-day seminar. For those who are unable to attend a seminar, the learning materials can provide an introduction to health economics. This could be considerably enhanced by recourse to a suitable resource person, either at WHO or elsewhere. Part 1 consists of an abbreviated version of the materials contained in the full book for use on an individual, private study basis. It includes: Overview 1 ZÖLLNER, H. ET AL., ED. Learning to live with health economics. Copenhagen, WHO Regional Office for Europe, 2003. 2 GUNNARSSON, D. ET AL., ED. Health economics as a tool for leaders.

Copenhagen, WHO Regional Office for Europe, 2003. 2 Health Economics as a Tool for Leaders • an introduction; • study material on four themes summarizing the contents of the programme for the one-day seminar. Part 2 contains material prepared for tutors, although components could be distributed to participants in the seminar if the tutor thought this appropriate. It consists of: • a model for a one-day seminar, with a description of what is included from the full set of learning materials and why; • the suggested organization and timing of the seminar and some other matters for the tutor conducting it; and • the contents, organized by key themes, including overheads as well as exercises and role-plays to be used during the seminar. Access to the learning materials and participation in a one-day seminar could be organized through the WHO liaison offices in countries, individual WHO programmes using them or sponsorship of colleagues by an interested senior decision-maker in the WHO European Region or through other interested organizations (such as aid agencies). The materials could also be offered for use in other WHO regions. Users of the materials might also seek further advice from experts in the WHO secretariat, the authors of the modules, the International Economic Association or participation in a formal course. Health Economics as a Tool for Leaders 3 Part 1 Learning materials for private study Introduction Health policy and practice is a large and complex area. It benefits from a range of perspectives, including that of economics. The WHO Regional Office for Europe has developed a set of health economics learning materials, Learning to live with health economics (“the book”),1 organized in 25 modules, with the aim of assisting various potential audiences to benefit from the valuable insights that can be afforded by the discipline of economics. The highest level of health care decision-makers, comprising ministers of health and their most senior officials, are important potential users of these modules. However, they are extremely busy and unlikely to be able to find the time to work systematically through the full book. In addition, some of the elements in the modules are more relevant than others to very senior decision-makers, for example, ways of thinking as opposed to specific tools of analysis. This abridged version, entitled Health economics as a tool for leaders, has therefore been produced for this group of users to serve as an introduction to the subject. The materials are intended to enable senior decision-makers to: • make a more extensive and prudent use of health economics; • judge better what are appropriate or inappropriate circumstances for their application; • appraise more perceptively the advice they receive from economists. Value ed for senior decision-makers is especially to be found in: • specific cases where economic input is provided (or should be included); • the economic way of thinking (e.g. incentives, balancing costs and benefits, marginal analysis, equity and efficiency); • specific economic tools, concepts and reasoning. The learning materials can help the user: • to gain a fuller understanding of where particular economic concepts, approaches or tools can appropriately be used (appreciation); • to make critical assessments of particular studies or uses of health economics in decision-making (appraisal); • to a lesser degree, to apply techniques or tools (analysis). 3 Zöllner, H. et al., ed. Learning to live with health economics. Copenhagen, WHO Regional Office for Europe, 2003. 4 Health Economics as a Tool for Leaders Four broad health economics themes are looked at. The material has been organized into a page or so on each theme and selected topics, containing summaries of the major points in the corresponding elements of the full set of health economics modules.

Health Economics as a Tool for Leaders 5 Overview 1. Theme 1 includes: • how health is produced • how health does not equate to health care • how health relates to the broader: – economy – society. 2. Four aspects are especially important for decision-makers: 1. the many interacting influences on health (such as health care and the environments in which people live, work and play), and

thus the wide range of activities and policies which have consequences for health; 2. issues concerning the possible allocation and reallocation of resources for health, including the differing viewpoints of various participants (illustrated by those of health compared to economic ministries); 3. how the economic, social and other environmental determinants of health interact with individual behaviour and public policy and have powerful implications for efficiency and equity in health; 4. the complexity of the situations which decision-makers often face, with particular emphasis on possible futures, how their essential features can be provided in a helpful form, and what implications they have for developments in health policy and practice. 1.1 Interrelationships, and everybody's concern 3. Since health systems and economic systems are interrelated in complex and important ways: • health care can be an important influence on health but it is only one of the determinants of health; • the environments – social, economic, cultural and physical – in which people live, work and play interact with individual factors (such as genetics) to influence strongly who gets ill; • health does not equate to health care, and they need to be analysed separately. Theme 1. Economics of health 6 Health Economics as a Tool for Leaders 4. Since health policy encompasses much more than merely health care policies (important though those are): • many activities and policies outside the health sector nevertheless have important consequences for health; • these activities and policies can legitimately be viewed as the subject of health policy; • intersectoral collaboration and action are needed to improve health; • health should be everybody's concern. 1.2 Reallocation of resources for health 5. The optimum use of scarce resources to achieve health gains involves continuing consideration of the possibilities for allocating and reallocating resources within the health care sector. • This can involve both existing resources and additional resources that become available. • Intersectoral collaboration for improving health frequently requires reallocation of resources from one sector to another. 6. Reallocation can be of five main types: • among health care activities • among non-health care activities within the health system (e.g. seat-belt legislation) • between health care and non-health care activities within the health system • between the health system and other systems (e.g. education) • among other systems. 7. Other important dimensions of resource reallocation are: • the type of resource being reallocated (e.g. people, time) • different levels of decision-making (e.g. school) • the public as compared to the private sector. 1.3 Economic, social and individual determinants of health 8. There are important economic and social influences on health, which interact with genetic endowments and individual behaviour. Five important factors are: • genetic endowment • life risks • the individual's environment • behaviour of individuals and their social groups • the health care system, including prevention and promotion. 9. There is an apparent

health divide in the population between educated and less educated people. These two groups can differ markedly in evaluations of their own health and in their attitudes towards professional health services. These differences can have consequences for their health behaviour, including their use of health care. 10. Nevertheless, individuals can have a considerable influence on their state of health. Economic analysis can be used to understand individual health behaviour and differences in health among people. Many other parties, including families, have incentives for investing in the health status Health Economics as a Tool for Leaders 7 of an individual, but the extent, ways, possibilities and impact are different. Senior decisionmakers help to determine the frameworks within which these decisions are made, and the incentives for particular actions and choices. 11. Public policy measures can improve health: (i) directly through improvements in the environment, or (ii) indirectly through changes in the regulation and incentive structures that influence health behaviour. Population health depends on both the health of its individual inhabitants and its distribution. 1.4 A futures orientation 12. The environment for taking decisions on health has become more

complex, more uncertain and more stressful at all levels, even before the threat of increased international terrorism. 13. Futures work goes beyond forecasting and prediction. It is a useful approach to addressing complex issues and coping with the uncertainties of policy-making. It includes the participative development of alternative scenarios and the scanning of developments in the internal and external environments for new opportunities and new threats. 14. The purpose of futures work is not to make predictions but to provide foresight. It explores alternative futures and supports long-term strategic thinking on pressing issues. Both quantitative models and qualitative assessments can contribute. Futures work should not be ad hoc but an integral part of continuing foresight intelligence systems. It embraces significant interlocking dimensions, such as key actors, context and timing. 8 Health Economics as a Tool for Leaders Overview 1. Theme 2 is concerned with thinking about the development of health systems, with particular reference to countries in the WHO European Region. Aspects of knowledge about the economic approach (often lacking among potential users) are addressed. 2. Economists judge the development of health systems by two key criteria (2.1): (i) equity, thought of as fairness, relating to both processes and outcomes; and (ii) efficiency, including technical efficiency, cost–effectiveness and allocative efficiency. 3. An important aspect of the overall reform of health systems (2.2) is the identity which exists between expenditure, income and revenue, and its implications for senior decision-makers (and other potential users of the learning materials). 4. Two issues are especially important, financing systems and privatization (2.3 and 2.4, respectively). 2.1 Equity and efficiency 5. Equity can be thought of as fairness. A framework is presented for thinking about how to make a fair distribution of the various resources that are available, building on three elements: 1. certain features of health care mean that it should be distributed differently from other goods and services; 2. it matters who receives health care goods; and 3. the process chosen to distribute health care services must be equitable. 6. There is no correct technical answer to a question about the fairness of a given distribution of resources. Values matter. What is acceptable in one jurisdiction may not be acceptable in another. 7. In focusing on efficiency, health care must be distinguished from health and the even broader concept of wellbeing. The three main elements of efficiency are: 1. technical efficiency ("do not waste resources"); 2. cost–effectiveness ("produce each output at least cost"); and 3. allocative efficiency ("produce the types and amounts of output which people value most"). The first two requirements relate only to production, while the third introduces consumption, thereby bringing together the supply and demand sides. Theme 2. Economics of health systems development Health Economics as a Tool for Leaders 9 8. Efficiency does not necessarily imply social desirability, since distribution of the costs and benefits can make an important difference to decision-makers. For almost any use of society's resources, there will be winners and losers. Thus, considerations of equity are often linked inextricably to considerations of efficiency. 2.2 Expenditure ≡ income ≡ revenue 9. The national income–expenditure accounting principles that apply to other economic sectors also apply to the health sector. Thus, every item of expenditure on health care is also an income to someone in the health care industry, and it must be financed through revenue of one type or another. 10. An examination of all three dimensions of proposed or actual health care reforms can provide important insights, for example: • into the redistributive income effects of policy changes • into the likely impact on expenditure levels • into the real availability of health care services. 11. The identity can be extended in various ways, e.g. by introducing a "health production" function, a "health care production" function, a demand relationship or a capacity relationship. 12. The identity can be used to record and understand retrospectively the changes that have occurred, and also to examine prospectively the probable consequences of

proposed health care reforms. 2.3 Implications of financing systems 13. There are many objectives of health policy, including macroeconomic efficiency, microeconomic efficiency, quality, feasibility, choice and responsiveness. The objectives can also conflict. Thus, various choices can be made in seeking to satisfy objectives. 14. There are various methods of financing health services (general taxation, social insurance, user charges, etc.), of paying providers (such as doctors, hospitals and the providers of pharmaceuticals), and of allocating resources (including budget allocation formulae, a purchaser-provider split and evidence-based approaches). 15. Each method of finance, payment and resource allocation has advantages and disadvantages, is more suitable for some circumstances than others, and generates incentives to act in particular ways. There are also interactions between the method of funding, the purchasing agents and the providers of health care. 16. In all health systems a balance has to be struck which enables three objectives to be achieved, wholly or in part: 1. allocation, including the cost-effective production and procurement of appropriate health goods and services; 2. distribution, including fair financing, fair access to health goods and services and fair payment to providers; 3. sustainable development over the longer term, including appropriate incentives for performance and health, policy development and the management of change, and a sustainable resource base. 10 Health Economics as a Tool for Leaders 2.4 Privatization issues 17. The term “privatization” can refer to several different economic functions which occur in health care systems. When using the term it is important to be clear about which function(s) are involved, for example: • ownership of facilities and delivery of services • financing • management and administration • regulation • provision of information. 18. These functions are only the means by which countries attempt to achieve important policy objectives or ends, such as: • improved health outcomes • equity in access to, and payment for, health services • efficiency in health service delivery • provider and patient satisfaction • overall expenditure control. 19. The choice of ends requires that important value judgements are made. These value judgements can differ across societies (and within them). There is no single “best” way to organize and finance health care systems that “wins” on all performance criteria. Proposals to move from one system to another need to be examined for the potential for disadvantages as well as advantages to emerge. 20. The public versus private debate is becoming blurred in health care by the development of new models of joint public-private partnership. Increasingly, it is necessary to conduct analyses at the level of specific proposals, with clearly identified objectives (rather than at the level of stereotypes). Nevertheless, overall stewardship of health care functions remains a core responsibility of the public authorities. Health Economics as a Tool for Leaders 11 Overview 1. Theme 3 is concerned with
6 change, a pervasive feature of European health systems (and societies). Change, and how to manage it, is relevant to all stakeholders in the health and health care systems. It also affects their relationships with other sectors, disciplines and stakeholders. 2. The discussion is organized in three parts. 1. An introduction to concepts for health policy analysis (3.1), which is the study of: • why groups respond to some health problems or issues and not others; • why groups develop some health policies and not others, and • why groups implement some health policies and not others. The decision-makers will develop skills in identifying patterns in agenda-setting, health policy development and health policy implementation, and understanding the reasons for those patterns. While analysis is a valuable aid for understanding and empowerment, the policy world is, of course, a messy place where the implementation of change generally involves bargaining, negotiation and compromise. 2. The ways in which the political system, in the sense of organized society or civil government rather than in the narrower party political sense, seeks to manage public health (3.2), especially its protection, promotion and stewardship functions. The underlying ethic is that of

equity, in the sense of fairness. The material considers the valuable contribution which can be made by economics and economists to achieving the objectives of health for all; and identifies the key success factors for an effective approach to the political management of health policy and changes in health practice. 3. Citizens' participation, patients' rights and ethical frameworks (3.3). These topics are often inadequately considered in health economics textbooks, and traditional economic theories based on individual preferences do not adequately describe the full set of conditions that influence demand in health care markets. In fact, a knowledge of theoretical frameworks of ethics and rights and the possible strategies for their implementation are of great importance for senior decision-makers, as they can regulate or otherwise influence the market and the behaviour of participants on both the supply side and the demand side. Furthermore, citizens' participation, patients' rights and consumers' rights are widely expected to play an increasingly important role in health care markets in the future. Theme 3. Economics of management and the change process 12 Health Economics as a Tool for Leaders 3.1 Policy analysis, bargaining and negotiation 3. Identifying patterns in agenda-setting, health policy development and health policy implementation, as well as understanding the reasons for these patterns, are important skills. • Why are some health problems or issues included on the agenda for discussion (and not others)? • Why are some health policies developed to achieve particular objectives, using particular policy tools (and not others)? • Why are some health policies acted upon by people in the field (and not others)? 4. Health policy can be considered at each level of decision-making. Senior decision-makers are particularly important in relation to agenda-setting, the development and determination of policy, and setting the parameters within which implementation occurs (e.g. resourcing, timing). 5. Three factors are typically cited to explain action or inaction in policy development at the most senior levels: • interests – who wins and who loses • institutions – the rules for decision-making • ideas – both values and research. 6. Policies are more likely to be developed when: • the benefits are concentrated among more influential groups (and the costs across less influential groups); • decision-making structures concentrate influence at the same level of policy-making; • policies are less visible (especially to those who have costs imposed on them); and • both values and empirically tested "facts" support the policy. 7. The insights can be used to: • assess the feasibility of change; and • establish a strategy for bringing about change, when it appears to be feasible. 8. Strategy is likely to include the following steps: • start with a stakeholder analysis: – determine who wins and who loses – what this means for the political feasibility of the proposal; • set a framework for change: – determine the rules for decision-making, and – whether values and empirically tested "facts" support the policy; • establish political strategies for improving the chances that the policy will be adopted: – bargaining and negotiating – strengthening the position of supporters (and weakening the position of opponents) – mobilizing unorganized supporters (and deterring organized opponents). 3.2 Public health: protection, promotion and stewardship 9. Public health approaches can be narrowly or more broadly focused, covering the organized efforts of society to protect and promote the population's health, prevent and control disease, mitigate the effects of disability and handicap, and ensure the wellbeing and care of those with Health Economics as a Tool for Leaders 13 chronic health problems and the terminally sick. 10. Primary health care (as advocated originally by WHO) provides a set of principles and identifies actors to be involved and ways of mobilizing resources. The underlying ethic is equity, in the sense of fairness. 11. Public health management makes use of economic concepts and reasoning (such as substitution, pricing, utility, knowledge, costs and benefits, timing, distribution, incentives, returns to scale) and of economists as advisers. However, it is aware of the limits of their frame of

reference, the assumptions they make, and the questions they cannot answer. 12. The health for all agenda distinguishes between the: • musts, e.g. ensuring a safe environment, minimizing hazards; • choices, e.g. creating alternatives that reflect social and individual preferences; • challenges, e.g. developing appropriate policy responses to acknowledged social problems with health consequences. Note that practical responses, not rhetoric alone, are the test. This includes effective and sustainable implementation. Top leadership needs to be combined with widespread community participation. There are various potential outputs, including political, activity and health outputs. 3.3 Citizens' participation, patients' rights and ethical frameworks 13. A knowledge of theoretical frameworks of ethics and rights, as well as strategies for their implementation, are of great importance for senior decision-makers, as these factors can regulate or influence the market. Traditional economic theories of individual preference need not adequately describe the patterns of demand in health care markets, since they can also be influenced by providers and public health interventions. 14. Citizens' participation, patients' rights and consumer' rights are likely to play increasingly important roles in the overall health care market in the future. Strategies for the implementation of these concepts range from advocacy models through implicit legal reinforcement to explicit charters of health rights. These changes are significant for the work of senior decision-makers in all health care systems. 15. Utilization frameworks of assessment, such as cost–effectiveness analyses, are likely to be supplemented increasingly with approaches that are sensitive to health rights in discussions on, for example, rationing and priority-setting. The legally based and economically based approaches to decision-making in health care can be competitive or complementary. 16. Senior decision-makers are becoming more accountable and responsible, to a broad range of individuals, groups and institutions, for health care outcomes and processes. **This trend is likely to continue; with more emphasis on positive as compared to negative rights. 14 Health Economics as a Tool for Leaders Overview** 1. Some of the tools available are: (i) health outcome measurement (ii) costing (iii) economic evaluation (iv) development and diffusion of health technology (v) economic modelling and forecasting. 2. The emphasis is on when the tool is useful and on elements requiring critical assessment. There is detailed information about each tool in the full set of learning materials. A range of other tools, e.g. human resource management, are available elsewhere. 4.1 Use of tools in supporting decision-making 3. You can judge for yourself when economic tools can be helpful in your decision-making, although the production of economic information requires expert knowledge. 4. The information is not an end in itself, and can be presented in more or less helpful ways. For example, in assessing economic evaluations the following ten-point check list would be useful. (i) Was a
6 well defined question posed in answerable form? (ii) Was a comprehensive description of the competing alternatives given? (iii) Was effectiveness of the programme services established? (iv) Were all the important and relevant costs and consequences identified for each alternative? (v) Were costs and consequences measured accurately in appropriate physical units? (vi) Were costs and consequences valued credibly? (vii) Were costs and consequences adjusted for differential timing? (viii) Was an incremental analysis of costs and consequences of the alternatives performed? (ix) Was allowance made for uncertainty in the estimates of costs and consequences? (x) Did the presentation and discussion of study results include all issues of concern to users? Do not let the perfect become the enemy of the merely good. Theme 4. Some economic tools Health Economics as a Tool for Leaders 15 Part 2 Materials for tutors to organize a one-day seminar The target audience The WHO Regional Office for Europe has developed a set of health economics learning materials, Learning to live with health economics ("the book"),4 organized in 25 modules. The purpose of this book is to assist various potential audiences to benefit from the valuable insights

that can be afforded by the discipline of economics, broadly defined. The material is complementary to other material on health economics that is already available. The modules in the book are concerned with a broad range of matters. They should enable the various potential users to make a more extensive and prudent use of economic concepts and tools, to be better equipped to judge what are appropriate or inappropriate circumstances, and to appraise more perceptively the quality and relevance of the advice they receive from economists. Health policy and practice is a large and complex area. It can benefit from a range of perspectives, including that of economics, which is particularly useful for decision-makers since resource limitations and financial constraints apply in all health systems and at all levels. There are always more useful activities competing for priority than can be resourced, and this has significant implications for resource allocation decisions, health outcomes and equity. The economic approach fits particularly well with the public health view of the issues, problems and possible solutions included in WHO's overall health for all strategy, and specifically **HEALTH21, the health for all policy framework approved by the WHO Regional Committee for Europe in 1998**. There are various potential users, as discussed in the introduction to the book. Some of the most important are policy-makers for health at the highest level, including ministers, their advisers, concerned members of parliament and the most senior officials, such as the heads of countries' health agencies. Such people are extremely influential in relation to health policy, the framework within which health practice occurs, and the relationships with other important players such as the finance ministry, other ministers, the private sector or the media. Their decisions also affect significantly the context in which other potential users (such as managers and practitioners) operate, the incentives they face, and the decisions they make. For the benefit of policy-makers at the highest level, WHO has also produced this abridged version of the book entitled Health economics as a tool for leaders. 2 Part 2 of this book, aimed at 4 ZÖLLNER, H. ET AL., ED. Learning to live with health economics. Copenhagen, WHO Regional Office for Europe, 2003. 5 GUNNARSSON, D. ET AL., ED. Health economics as a tool for leaders. Copenhagen, WHO Regional Office for Europe, 2003. 16 Health Economics as a Tool for Leaders tutors, (i) shows how the full set of learning materials can be tailored to decision-makers at the highest level, (ii) suggests a specific learning approach (a one-day seminar) to meet their particular needs, and (iii) provides tutoring material to help prepare overheads and exercises. The material is based on the book. No additional modules have been developed, although no doubt this could be done at a later stage to meet the special interests of particular groups of senior decision-makers. Health Economics as a Tool for Leaders 17 I t is emphasized in the book that the learning modules need to be carefully customized for the different groups of users, taking account of their particular interests and experience. The most senior policy-makers at the political and official levels in health care establish appropriate parameters for decision-making by practitioners and lower level managers, set the framework for intersectoral relationships and obtain resources for their sector. It is particularly important for them to know what economics, including its concepts, tools and way of thinking, can add to their capacity for making effective decisions. Where is it useful (and where less so)? How does it interact with other issues of importance (e.g. in intersectoral relationships, in discussions with key stakeholders, in negotiations with the finance ministry)? How should they appraise the economic component of the advice they receive, or identify situations when it should be present but is missing? In developing the tutoring material it was assumed that these very senior decision-makers would be more likely to be interested in the economic way of thinking than in the minutiae of techniques and approaches – the "thinking" rather than the "practical" modules. The contents and learning processes should also, whenever possible,

build on matters of immediate interest to participants and develop from them the broader insights and knowledge which will be beneficial in the longer term. This point is illustrated, for example, by the relative time scales for decision-making by senior politicians and officials compared to economists (or risk compared to uncertainty in current discussions on bioterrorism). The complete book and its full set of modules can be used at the levels of appreciation, appraisal and analysis. Appreciation helps users to gain a fuller understanding of where particular economic reasoning, concepts or tools can be used in health policy-making or practice. Appraisal assists users to make critical assessments of particular studies or uses, including potential uses, of health economics in their work or the related work of others. These two levels are judged likely to be the most appropriate for very senior decision-makers. The third level, analysis, assists users to apply the concepts or tools (e.g. health outcome measurement, costing, or cost–effectiveness analysis). Although this is not a primary purpose here, increasing skills in analysis (even fairly rudimentary analysis) can hone appreciation and appraisal capacities, and thus enable health economics to be applied more appropriately and consistently. Against this background the material in this abridged book is organized around an introduction, four key themes and a conclusion. **Tailoring learning materials to the highest level of decision-makers 18 Health Economics as a Tool for Leaders** • The introduction emphasizes: (i) the contribution which the learning materials can make to senior decision-makers in health care, (ii) areas where particular value is added for them (specific cases; specific concepts, tools and reasoning; and the economic way of thinking), and (iii) the three levels of use (appreciation, appraisal and analysis) with their different degrees of relevance for senior decision-makers. • The economics of health is concerned with: how health is produced; how health does not necessarily equate to health care; and how health relates to the broader economy and society. Both processes and outcomes are important. The theme includes consideration of how the economic, social and other environmental determinants of health interact with individual behaviour and public health; and the importance of intersectoral activities for health. This theme includes material from all of the relevant modules in the book, but in an abbreviated form which focuses on those aspects of particular importance for very senior decision-makers. • The economics of health systems development is concerned with the development of health systems, with particular reference to the WHO European Region, and addresses aspects of knowledge about the economic approach in health care which are not always appreciated, even by senior decision-makers. The two key criteria by which economists judge the development of health systems are discussed: equity, thought of as fairness, relating to both processes and health outcomes; and efficiency, including technical effectiveness, cost–effectiveness and allocative efficiency. The identity between expenditure, income and revenue in health care is presented, a simple concept with powerful implications (and which can be elaborated considerably). The identity relationships can be used to record and understand retrospectively the changes that have occurred in health care expenditure, income and revenue, and also to examine prospectively the likely consequences of proposed health care reforms. This theme draws on the relevant “thinking modules” of the book, but omits or drastically reduces the main context-specific applications, to fit the time which senior decision-makers can make available. • The economics of management and the change process is concerned with change and how to manage it. Change is a pervasive and continuing feature of European health care systems and the broader economic, social and political environments with which they interact. Change and how to manage it is critical for senior health care decision-makers; for their relationships with other decision-makers in health care, such as managers and practitioners; and for their relationships with other sectors, disciplines and stakeholders. This theme includes discussion of agenda-setting,

policy development, policy implementation, and negotiation in health care; how public health is managed, considering especially the protection, promotion and stewardship functions; and citizens' participation, patients' rights and ethical frameworks. For example, a knowledge of theoretical frameworks of ethics and rights and possible strategies for their implementation is of great importance for senior decision-makers, as these factors can regulate or otherwise influence the market and the behaviour of participants on both the supply side and the demand side. The relationship between legally-based and economically-based approaches to decision-making in health care is of great interest; and citizens' participation, patients' rights and consumers' rights are widely expected to play increasingly important roles in future throughout the European Region. This theme for the seminar draws on a number of the modules in the book, but in an abbreviated form, given the sharp time constraints, and omitting most of the discussion concerned with practitioners and managers. • The final theme, on five economic tools, is treated in brief, since there is detailed information on each tool in the book, a range of other tools are available elsewhere (e.g. on human resource management, or information, research and other evidence for decision-making), and the most senior decision-makers in health care are unlikely to undertake such analyses themselves. The emphasis in this theme is on the sort of tools which are available, where they can contribute to decision-making by ministers and senior officials (and where their absence should raise queries **Health Economics as a Tool for Leaders 19** about why) and the elements of the tool's application which warrant careful scrutiny. It is emphasized that the analyses are not an end in themselves, but an aid to better decision-making, and that the results can be presented in more or less helpful ways. • The conclusion summarizes what has been learned and reiterates that the learning will not have made the readers economists but was meant to assist them to undertake their demanding duties better. Overheads and exercises are included for each theme, to explore important aspects and to vary the format of the educational setting. The exercises can be modified or supplemented for particular groups, if required. They are intended to be discussed in working groups and then considered in a plenary session. Two role-plays are also included, one involving a finance minister and a health minister, and the other simulating negotiations over a pay claim between the government and the national association of doctors. Thus, the detailed contents of the learning package are: Theme 1. Economics of health 1.1 Interrelationships, and everybody's concern 1.2 Reallocation of resources for health 1.3 Economic, social and individual determinants of health 1.4 A futures orientation Theme 2. Economics of health systems development 2.1 Equity and efficiency 2.2 Expenditure income revenue 2.3 Implications of financing systems 2.4 Privatization issues Theme 3. Economics of management and the change process 3.1 Policy analysis, bargaining and negotiation **3.2 Public health: protection, promotion and stewardship 3.3 Citizens' participation, patients' rights and ethical frameworks Theme** 4. Some economic tools 4.1 Use of tools in supporting decision-making Exercises Conclusion The learning objectives are set out in the introduction to Part 1 of this book. ≡ ≡ 20 Health Economics as a Tool for Leaders There are several ways and formats in which very senior decision-makers can be brought together to learn. As an example, a prototype seminar on "Health Economics as a Tool for Leaders", involving a one-day commitment, is described below. Timing and organization The considerations are dominated by the limited time which the participants can make available. The judgement was made that they would not make more than one day available. Given this there appeared to be two alternatives. The first would be to start at lunch-time on day one and continue that afternoon and evening and the next morning, ending with lunch on day two.

Two general matters could be considered at some stage in the seminar. (i) The first matter relates to certain misconceptions about economists, e.g. they only work with small aspects of the overall picture and are thus not in a position to understand the full implications; they possess a master model which could answer any question as soon as sufficient data of high quality become available; or, while bringing some interesting insights, they always seem to appear at the wrong time. These matters could, for example, be included in the introductory remarks, with some comments on their accuracy or inaccuracy and some suggestions as to how to ensure that the best value is derived from the economists' potential contribution. (ii) The second is just when the senior decision-maker would expect economists to make their contribution. This issue can arise at a number of points in the seminar. It relates to what sorts of problem are particularly amenable to economic ways of thinking; the stage of the decisionmaking process where economics is most likely to be helpful; the specific tools to be applied to which problems; and where the absence of economic input suggests caution in reaching a decision. In the final section of the seminar themes 3 and 4 could be treated separately (rather than together, as proposed), with each presentation followed by a discussion of the relevant exercise in working groups, and a final plenary discussion of both exercises together. This is on the whole less preferred, as it would provide fewer opportunities for the groups to follow their own particular interests in discussing the two areas. For example, some groups may wish to devote more attention to management and the change process than to a detailed discussion of economic tools. The proposed arrangement allows greater flexibility to meet differing interests over time and between and within groups. The emphasis in the section which discusses the five economic tools should be on what each tool is useful for, from the viewpoint of the most senior health care decision-makers (or other participants). It is worth emphasizing that a wider range of tools is available elsewhere, for example on information for decision-making or human resource management. With respect to each tool individually, and the tools of economic analysis generally, the focus for the discussion is primarily on: • when consideration should be given to using them (and when their omission should be queried); and • which elements of the tool require critical assessment to support judicious use. It is not envisaged that participants should receive a copy of the full set of learning materials (although it is publicly available for use, if required). However, it is expected that tutors will distribute copies of the overheads they propose to use at the beginning of the relevant sessions, and provide copies of the exercises and role-plays to the participants. An introduction for participants, including material similar to that included above under "The target audience" and "Tailoring the material", would be distributed at the beginning of the seminar. It is not proposed that any of the material be 6 distributed prior to the seminar. The number of participants influences the structure of the meeting. This proposal assumes that there would be about 15 participants. This permits a range of perspectives to be represented, each participant to be engaged actively and three working groups to be formed. There is some flexibility, of course, but it is suggested that numbers not exceed 20. 22 Health Economics as a Tool for Leaders Adapting the model Although this seminar material has been developed for an audience of the highest level of decisionmakers in health care, there are other groups of senior decision-makers for whom the material, with some modifications (including the exercise and the role-plays), could also be helpful. • Politicians, such as those in portfolios which interact with health or members of parliamentary committees, both continuing committees and ad hoc inquiries. Most of the material appears to be pertinent to their interests, but given their high status and limited time it is suggested that scope be provided for them to modify the structure (particularly the exercises and role-plays) to suit their current concerns. This may be particularly important for ad hoc committees or nonhealth ministers, both of whom are likely to have a more

targeted focus than continuing health committees. Similar comments apply for seminars which focus on senior bureaucrats in agencies that interact with health care agencies or that have a significant independent effect on health outcomes, such as transport, education, income security, housing or the environment. • Major funders of health research, including those who are developing material for evidencebased medicine and practice guidelines. These bodies can be dominated by medical perspectives and could benefit significantly from a greater appreciation of what economics, management and public policy approaches could contribute to their activities. However, they would, in many cases, probably seek a rather different balance in the material to be included. For example, they might want more on information, evidence and decision-making, dissemination, change and the role of professional associations; on the interface between patient care, epidemiology and economics; and generally more on outcomes and less on processes. They might be more concerned with the perspectives of providers relative to users and less interested in some topics which are currently included, such as privatization. It would be helpful if their material stressed the economic contribution to both prospective (including priority areas for research) and retrospective analyses. The exercises (and role-plays) might need to be modified or supplemented to meet the particular requirements of this audience. • Courts and other judicial bodies whose activities include regular or occasional consideration of health-related matters, e.g. compensation for injuries at work or on the roads, complaints about poor quality health care or allegedly inequitable treatment by health care providers or in health care institutions. Again, much of the material currently included appears relevant to their concerns (e.g. equity and efficiency). Some matters are likely to be of less interest to them (e.g. privatization), and other matters would warrant additional consideration (e.g. citizens' participation, patients rights and ethical frameworks, and the relationship of legally-based to economically-based approaches for decision-making in health care). The exercises (and roleplays) could be modified, and new ones added, to meet the special needs of this audience. The focus of these decision-makers may tend to be retrospective, in which case care should be taken to ensure attention is given to prospective elements, including incentives and indirect effects. It would be appropriate to consult them about their special requirements and concerns, including current issues and specialist responsibilities. In addition, for each of these specialist groups it is open to question whether an experienced tutor with economics knowledge should be supplemented by another contributor whose expertise is closer to that of the participants, such as a (former) minister or parliamentarian, the head of a research funding body or a judge, respectively.

Health Economics as a Tool for Leaders 23 The material has been developed for an audience of the highest level of decision-makers in health care, such as ministers of health or very senior officials. Sample overheads have been prepared on the most important topics and messages to assist tutors. Also provided are texts in telegram style which could form the basis for additional overheads. You may not wish to use them all, but to select those that are most relevant to particular audiences and to use the additional texts provided for constructing your illustrations. Ideally, matters of pressing, immediate interest to participants can be used to develop the broader insights that will be beneficial for them in the longer term. The intention is that, in the seminar itself, there will be opportunities throughout all the sessions for discussions to be stimulated among the participants by the material presented. While capitalizing on matters of special interest to the group presents a challenge for the tutor, it enables their current concerns to be used to introduce more general economic principles, techniques and approaches. This is more likely to

engage the interests of participants, to bring out relevant aspects of their experience, and to stimulate active learning. If, as a result, they consider in their subsequent decision-making the possible relevance of economic factors (even if they decide deliberately to ignore them), the seminar will have been successful. The tutor needs, of course, at the end of each session, to ensure that all relevant points have been covered. Otherwise enthusiastic discussion of some matters may cause other important aspects to be overlooked, with the result that the overall learning experience is unbalanced. The themes are the same as in the learning materials, which also summarizes the messages to be understood and learned.

Teaching material: overheads 24 Health Economics as a Tool for Leaders Theme 1. Economics of health 1.1 Interrelationships, and everybody's concern Overhead: The macro triangle Health Health care Economy Society Overhead: A different view of health policy Policies, programmes, activities with health as their objective Policies, programmes, activities with health as their consequence Health Health Other goals Health Economics as a Tool for Leaders 25 Additional material for 1.1 Background 1. The book Learning to live with health economics is available. 2. Economics applied to: • the public policy process • health policy content • implementation and practice. 3. Economics considers both individuals and groups. Note that: • contexts vary • contexts are important. 4. Purpose: • to assist users • reflects WHO's role and modus operandi. Using the materials 1. Value added for senior decision-makers • examples, where economic input is either provided or missing • the economic way of thinking • sensitivity to local traditions, circumstances and values. 2. Three levels • appreciation • appraisal • analysis. 3. Senior decision-makers affect: • the context for others • others' decisions. Overhead: The health objectives–consequences matrix Does this policy or action have … Health as a (positive or negative)? consequence Health as an objective Yes Yes No No C D A B 26 Health Economics as a Tool for Leaders Interrelationships 1. Health systems and economic systems are: • complex • have direct and indirect relationships. 1.2 Reallocation of resources for health Overhead: Five principal types of reallocation: flows of resources A. Among health care activities. B. Among non-health care activities within the health system. C. Between health care and non-health care activities within the health system. D. Between the health system and other systems. E. Among other systems. Overhead: Conceptual framework: flows of resources Health care Non-health care Other systems Health system A B C D E Health Economics as a Tool for Leaders 27 Additional material for 1.2 Conceptual framework components 1. Reallocations can take place (i) within the health system, between: • different types of health care • health care and other health action (e.g. seat-belt legislation); (ii) between the health system and other systems in the economy and society. Two additional dimensions 1. The types of resource being reallocated, e.g.: • command over resources • the resources themselves. Overhead: Conceptual framework: three dimensions Type of resource Facilities and space Equipment and supplies Human resources Budgets National/ international Regional/subregional Local/community Identity/level of decision-maker A B C D E Type of reallocation A Among health care activities B Among non-health care activities within the health system C Between health care and non-health care activities within the health system D Between the health system and other systems E Among other systems 28 Health Economics as a Tool for Leaders 2. The responsible decision-makers • different levels of influence • public compared to private sector. The three-dimensional conceptual framework 1. Enables the intersectoral reallocation of resources for health to be: • conceptualized • discussed. 2. Possible applications: • a useful planning tool • a monitoring or auditing mechanism • prospective as well as

retrospective. 3. The local context may require: • adaptation • development. 4. Preparing the ground for effective implementation. 5. Application in an economy which is: • growing • declining. 1.3 Economic, social and individual determinants of health Overhead: Main socioeconomic determinants of health capital General socioeconomic and environmental conditions Housing Agriculture and food production Education Work environment Other Health services Water and sanitation Employment 4 1 2 3 Age, sex and hereditory factors Lifestyle factors Health Economics as a Tool for Leaders 29 Overhead: Critical transitions and life events 1. Depend on five factors: – generic endowment – life risks – the individual's environment – behaviour (individuals and their social groups) – health care system (including prevention, health promotion). 2. An apparent health divide in the population: educational level is a key variable – differences in: – individuals' valuation of their own health – attitudes towards professional health services – consequences for: – their health behaviour – including use of health care Overhead: Life events – an illustration 0 1 0 10 20 30 40 50 60 70 80 90 Health Status (QALY) Appendicitis Traffic Accident Lung Cancer Death Perfect Childbirth/Stress Depression/Retirement/Divorce Osteoporosis/ Loneliness Asthma Males Females Age 30 Health Economics as a Tool for Leaders Additional material for 1.3 Individuals, health and families 6. Most individuals lead their lives in families: • substantial potential impact on health. 7. The early years of life, e.g.: • family, income, education and behaviour • gradual change from parental to individual decisions. 8. Adult life: • endowment from earlier life • adult living arrangements, e.g. single or married • children encourage specialization in the household • impact on health of family breakdown: for children, for adults. 9. Ageing, e.g. • living without a partner • intersectoral aspects • rising political voice • under-utilized resource. Overhead: The individual as a producer of health 1. Transformation of health inputs into health outcomes: – state of health technology – individual knowledge 2. Constraints include: – time; money; prices; regulation. 3. Individual preferences: – differ; may change. Therefore, maximizing individual preferences is not equal to maximizing individual health. Health Economics as a Tool for Leaders 31 Additional material for 1.4 Stakeholders 1. With many stakeholders, action may be required: • by different decision-makers • in different organizations and sectors. 2. In such circumstances, a command and control approach: • is not feasible • is not appropriate. 3. There can be many stakeholders, including: • scientists • the media • decision-makers, taking account of internal and external environments. Futures work 1. Purpose is not to make predictions but to provide foresight. 2. Explores alternative futures. 3. Supports long-term strategic thinking on pressing issues. 4. Quantitative models can contribute. 5. Should not be ad hoc but part of foresight intelligence systems. 1.4 A futures orientation Overhead: A futures orientation 1. The environment for health care decision-making becomes: – complex and uncertain. 2. Futures work includes: – the participative development of alternative scenarios – the scanning of developments for new opportunities and challenges. 3. It helps to: – address complex issues – cope with uncertainties in policy-making. 32 Health Economics as a Tool for Leaders Target audiences 1. The wider community (or some groups within it). 2. Policy analysts and advisers within government. 3. Senior policy advisers, who tend to want: • simple messages • succinct statements with firm content • clear relevance to pressing matters. Scenario writing 1. Storytelling about possible future situations with a particular purpose. 2. To help decision-makers engage with the choices to be made. 3. To identify where choices are likely to have to be made. 4. To clarify how the changes can be made best. 5. Embraces key interlocking dimensions: • the key actors • context • timing. 6. Develops a foresight capability: • ongoing • incorporate accumulative learning. 7. Benefits compared to costs: include timing, distribution and uncertainty. Health Economics as a Tool for Leaders 33 Theme 2. Economics of health systems

development 2.1 Equity and efficiency Overhead: Four important concepts • Equity Can be thought of as fairness. HEALTH21 cites “equity in health and solidarity in action between and within all countries and their inhabitants” as one of the three values that form its ethical foundation. • Efficacy Is concerned with how effective, say a pharmaceutical drug is in preventing, relieving or curing diseases (or their symptoms or complications). • Efficiency There are three main elements of efficiency: technical efficiency (“do not waste resources”); cost–effectiveness (“produce each output at least cost”); and allocative efficiency (“produce the type and amounts of output which people value most”). • Productivity What beneficial consequences are achieved by particular activities? The more benefits can be achieved for a given use of resources, the better; similarly, if the same level of benefits can be achieved using less resources (e.g. people, time or facilities). Additional material for 2.1 Fair distribution of resources 1. Do features of health care mean it should be distributed differently from other goods and services? 2. Does it matter who receives health care goods and services? 3. Does only the process chosen to distribute health care have to be equitable? 4. Does it matter, as well, how care ends up getting distributed? Note: (a) There is no technical answer. Values matter. (b) What is acceptable in one jurisdiction may be unacceptable elsewhere. 34 Health Economics as a Tool for Leaders Overhead: The magnitude of a society’s resource allocation problem Consumer products Transportation Defence Education Income security programmes Safe workplaces Primary care Hospital services Pharmaceuticals Resources Consumer products Transportation Defence Education Income security programmes Safe workplaces Other determinants of health Health services Primary care Hospital services Pharmaceuticals Other Other Other Health Other determinants of wellbeing General wellbeing Overhead: Six ways in which there can be too much health care 1. Effective health care that is more costly than necessary. 2. Health that is more costly than necessary. 3. Health care that is valued below its cost. 4. Health that is valued below its cost. 5. Health care that is not effective. 6. Wellbeing that is more costly than necessary. Health Economics as a Tool for Leaders 35 Equitable distribution To distribute equitably health-producing goods and services, or health, means distributing them: • in a way that is acceptable, given the characteristics of the goods and services such as: • their physical nature, specifically divisibility and scarcity • prevailing cultural beliefs, e.g. essential versus discretionary services; • in a way that is acceptable, given the characteristics of the recipients: • some recipients may have claims to a greater proportion of resources • for example, according to group membership, contribution to society, need; • according to acceptable processes, or criteria about acceptable outcomes of these processes,i.e. fair process or fair end states: • processes include: market exchange, queuing, governance processes • end states
6 include: equality, horizontal equity, vertical equity.

Three main elements of (economic) efficiency:

1. Technical efficiency (do not waste resources).
2. Cost–effectiveness (produce each output at least cost).
3. Allocative efficiency (produce output which people value most): • the types of output • the amounts of output. Note: (a) Equating costs and benefits at the margin: • may be met through prices and markets • often the required conditions are violated. (b) Technical efficiency and cost-effectiveness relate to production; allocative efficiency introduces consumption, thereby bringing together the supply side and the demand side.

Criteria for judging whether a change is an improvement:

1. The Pareto criterion: • measures allocative efficiency • is an individualistic notion • assumes a given distribution of income and wealth.

2. For most policies, there are both gainers and losers.
3. Potential Pareto criterion: • gainers could compensate losers • compensation not actually paid.
4. Allocative efficiency is not necessarily equal to social desirability.
Health Economics as a Tool for Leaders 2.2 Expenditure ≡ income ≡ revenue Overhead: The expenditure income revenue identity 1. Every expenditure on health care: – is also an income to someone – must be financed somehow through revenue. 2. Especially valuable insight for: – senior decision-makers – those involved in reforms. 3. Thus: – expenditure on health care, goods and services necessarily equal – income earned from the provision of health care, goods and services necessarily equals – revenues raised to pay for health care goods and services. Additional material for 2.2 In more detail 1. The relationship is an identity: the three items must be equal. 2. Expenditure = P x Q (where P is the unit price and Q is the quantity of each type of health care good and service). 3. Income = W x Z (where W is payment per unit of input, and Z is the various inputs which are combined). 4. Revenue = TF + SI + UC + PI (where TF is taxation, SI is social insurance contributions, UC is direct charges to users, and PI is private insurance provisions). 5. The identity can be used: • retrospectively • prospectively, e.g.: – for controlling publicly financed health care expenditure – for addressing real (or perceived) shortages of doctors – for responding to the increasing use and cost of drugs. ≡ ≡ Health Economics as a Tool for Leaders 37 Other complexities 1. P x Q ≡ W x Z ≡ TF + SI + UC + PI. 2. Z includes all who derive income from the provision of health care goods and services, including management. 3. A health “production function”, linking Q to the population’s health status. 4. A health care “production function” linking Q to Z. 5. A demand relationship, linking C to Q. 6. A capacity relation, linking Q to a maximum available stock of inputs and resources. 7. How could this identity assist other users (e.g. managers or practitioners)? 2.3 Implications of financing systems Overhead: Objectives of health policy (they may conflict) 1. Macroeconomic efficiency. 2. Microeconomic efficiency. 3. Quality. 4. Choice and responsiveness. 5. Feasibility and sustainability. Overhead: Methods of financing health services 1. General taxation. 2. Social insurance. 3. Voluntary, supplementary and private insurance. 4. Hypothecated taxation. 5. Medical savings accounts. 6. User charges. 38 Health Economics as a Tool for Leaders Overhead: Methods of paying providers 1. Paying doctors: – fee-for-service – capitation – salary. 2. Paying hospitals: – retrospective remuneration – prospective remuneration, e.g. line items, global budgets, DRG’s. 3. Paying for pharmaceuticals: – supply-side measures, e.g. pricing, formularies, cost–effectiveness – proxy demand-side measures (especially physicians; pharmacists) – demand-side measures, e.g. cost-sharing; health promotion. Overhead: Health systems: development and finance 1. Make allocation cost-effective – cost-effective production of appropriate health goods and services. 2. Make distribution fair – fair financing – fair access to health goods and services – fair payment to providers. 3. Make development sustainable – policy development, continuous learning, management of change – sustainable resource base – incentives for improving performance and health. Health Economics as a Tool for Leaders 39 Additional material for 2.3 Allocating resources 1. Budget allocation formulae, e.g.: • political versus health needs • long-term incentives. 2. Purchaser–provider split: • what actually works • influencing providers on how to deliver care. 3. Information needs for efficient purchasing, e.g.: • appraisal of population health needs • monitoring and evaluation, e.g. outcomes, institutions and clinicians • monitoring costs of provision • design of incentive-compatible contracts. 2.4 Privatization issues Overhead: privatization 1. Can refer to several different economic functions that occur in health care systems. 2. Economic functions include: – ownership of facilities – delivery of services – financing – management – administration –

regulation – provision of information. 3. When using this term it is important to specify clearly the function(s) involved. 4. The above functions are only the means by which countries seek to achieve policy objectives/ends. 5. Choosing ends requires that value judgements be made that: – may differ between countries – may differ within countries. 6. New models of public-private partnership: – the public versus private debate is becoming blurred – conduct analysis – at level of specific policy proposals – with clear policy objectives. 40 Health Economics as a Tool for Leaders Overhead: five other matters 1. All models have their respective advantages and disadvantages. 2. Countries proposing to change, need to examine the potential for new problems, e.g.: – the move from a tax-financed to a social insurance model may increase the need for managerial and actuarial skills. 3. Private is not equal to competition: – public and private refer to a status – Competition is a process. 4. Complexity of modern health care systems renders public/ private distinctions difficult: – boundary of what is "public" – joint ventures and shared ownership models – capital market and financing arrangements. 5. The overall responsibility of governments remains. Additional material for 2.4 Privatization principles 1. Evaluate the type, scope and degree of privatization. 2. Privatization is: • a means to achieve desired ends • not an end in itself. 3. Privatization is a question of determining property rights. 4. Selective privatization is more likely to work effectively in service provision than in funding. 5. Consult as widely as possible in setting policy objectives. 6. Never let the perfect become the enemy of the merely good. 7. Limited, small-scale experiments, trials or pilot schemes, may often be better than trying to implement new policy ideas across the entire health system. An example from a central Asian republic 1. Privatization ought to be part of a broader strategy: • for health reform • more generally. 2. The need for complementary policies, e.g. any core or guaranteed package. Health Economics as a Tool for Leaders 41 3. Operation of the capital market: • effect on sale price • sales relative to recurrent costs, investment needs • effects on future investment and innovation. 4. Create an appropriate regulatory environment, e.g. to control: • private institutions • professional power. 5. Train experts, including managerial cadres. 6. Contracting framework (do not have to be fixed contracts). 7. Creation of purchasing power, e.g. public, private insurance, individuals. 8. Interaction between: • privatization process, and • subsequent operation of private sector, and • coherence of public and private sectors. Theme 3. Economics of management and the change process 3.1 Policy analysis, bargaining and negotiation Overhead: Health policy analysis 1. The study of: – agenda-setting – health policy development – health policy implementation. 2. It is not: – political strategy – political advocacy. 3. Can be considered at three (linked) levels: – legislative – administrative – clinical. 42 Health Economics as a Tool for Leaders Overhead: Examples of topics addressed by health policy analysts Overhead: The Ljubljana Charter Steps in the policy-making process Levels of policy-making Clinical Administrative Legislative Agenda-setting Development Implementation Why are particular practice guidelines developed? Why do needs of a particular group become an issue? Why does privatization of health care become an issue? Why do practice guidelines for the same condition differ? Why do some managers of primary care centres focus on young children and others on the elderly? Why do some governments privatize health care and others not? Why are some practice guidelines implemented? Why do some programmes targeted at particular groups succeed? Why do privatization initiatives sometimes succeed? Health Economics as a Tool for Leaders 43 Additional material for 3.1 From understanding to action 1. Stakeholder analysis, and political feasibility. 2. Rules for decision-making: • values • facts. 3. Establish strategies for improving chances of adoption, e.g.: • bargaining • strengthening the position of supporters; weakening the position of opponents • mobilizing unorganized supporters; deterring organized opponents. Overhead: Evidence-based decision-making Based on Fig. 4 in: Canadian Health Services Research

Foundation. Health Services Research and Evidence-Based Decision-Making. Ottawa, Ontario. 2000.
http://www.chsrf.ca/docs/resource/ 44 Health Economics as a Tool for Leaders Some key elements 1. Objectives: • must be clearly defined • may be difficult to achieve completely. 2. Hallmarks of a quality health service: • commitment to health gain: add years to life, add quality life to years • commitment to people • commitment to resource effectiveness: − (a) the four E's: efficiency, effectiveness, economy and equity − (b) outcomes and processes are both important. 3. Maximizing policy gains, subject to constraints (or giving satisfaction): • bargaining, negotiating, compromising when unavoidable • balancing a range of risks • orientation to action and demonstration of gains. 4. Combination of a range of resources: • people (labour) especially important • rapid change requires continuing learning. 3.2 Public health: protection, promotion and stewardship Overhead: Public health system Public Health System (a) Health system (b) Health promotion • International, national, subnational, local ... levels • Actors and actions having an explicit health purpose Health protection Stewardship of health system Public health system (a) Public health system • International, national, subnational, local levels • Actors and actions having an explicit health purpose Health Economics as a Tool for Leaders 45 Additional material for 3.2 Public health approaches 1. Narrowly focused: • a range of technical services, especially environmental health and communicable disease control. 2. Broader, covering the organized efforts of society to: • protect and promote the population's health • prevent and control disease • mitigate the efforts of disability and handicap • ensure the wellbeing and care of those with chronic health problems and the terminally sick. 3. Primary health care (as originally defined by WHO): • provides a set of principles • identifies actors to be involved • includes mobilization of resources outside health care. 4. The underpinning ethic is equity (in the sense of fairness). 5. Health for all agenda moving through setting goals towards deciding rights (or vice versa). Issues on which the economist's contribution can be helpful 1. Public goods in the health field. 2. Notion of consumer sovereignty applied to health care, including: • the feasibility and limits of user choice • importance of knowledge. 3. Effects of dissemination and use of knowledge. 4. Monopolies, such as public institutions, professions, health insurance. 5. The appropriateness for the health field of: • laissez-faire • collectivism. 6. The concept of utility applied to the health field. 7. Pricing in health care. 8. Principle of substitution. 9. Costs and benefits; timing; distribution; and incentives. 10. Returns to scale and the division of labour. 46 Health Economics as a Tool for Leaders Effective implementation 1. Identify: • the courses of action required • the interested parties who should be involved • what consequences follow. 2. Seek political commitments, build networks, and encourage grassroots activities and support. 3. Negotiate action planning: • on specific issues • with preparation and consultation • building-in monitoring and evaluation. 4. Recognize: • the resources required and the benefits from early successes • that action can be, but often is not, taken • that implementation is more difficult in a declining than a growing economy. Primary health care 1. Resources are mostly provided: • by informal care, e.g. individuals, families or communities • some paid, some voluntary • by women. 2. Interventions: • are often diffuse rather than discrete, and long-term in their outcomes • closely linked to family, friends and community • difficult to evaluate using the empirical quantitative methods frequently used by health economists. 3. Changing demographic and social patterns pose special challenges to primary care in, e.g.: • long-term care • caring for older people • relationships among health professionals • the balance of cure and care. 4. Many health systems have concluded that: • health care should be organized around patients • communication is important • care requires coordination and cannot usually be

left to specialists. Health Economics as a Tool for Leaders 47 3.3 Citizens' participation, patients' rights and ethical frameworks Overhead: Level of dissatisfaction with health care systems (%) Overhead: Citizens' participation 1. Clinical accountability 2. Ethical accountability 3. Professional accountability 4. Legal accountability 5. Economic accountability 6. Political accountability Note: Their relative weighting varies between countries Source: Mossialos, E. Citizens' views on health systems in the 15 Member States of the European Union (1). Country Percent dissatisfied Country Percent dissatisfied Austria 4.7% Italy 59.4% Belgium 8.3% Luxembourg 8.9% Denmark 5.7% Netherlands 17.4% Finland 6.0% Portugal 59.3% France 14.6% Spain 28.6% Germany 10.9% Sweden 14.2% Greece 53.9% United Kingdom 40.9% Ireland 29.1% 48 Health Economics as a Tool for Leaders Overhead: Patients' rights 1. Can be linked to more general human rights: – equity, dignity, participation, justice – United Nations system, European Union 2. Greater specificity in patients' rights documents 3. Assuming a higher priority in practice (not only rhetoric) 4. Negative rights have been less controversial than positive rights. 5. Political, social and psychological pathways; financial consequences 6. Relevant for countries with widely different health systems Additional material for 3.3 Citizens' participation, patients' rights and ethical frameworks 1. A knowledge of frameworks of ethics and rights and strategies for their implementation: • is of great importance for senior decision-makers and health economists • they are factors that can regulate or influence the market. 2. Citizens' participation, patients' rights and consumers' rights will play increasingly important roles in: • the health care market • medical practice • treatment across countries, especially inside the European Union. 3. Various implementation strategies, e.g.: • advocacy models • implicit legal reinforcement • explicit charters of health rights. 4. Utilization frameworks of assessment (e.g. cost–effectiveness analyses): • likely to be supplemented with approaches sensitive to health rights in discussions on rationing and priority-setting. Health Economics as a Tool for Leaders 49 Strategies for implementation 1. Advocacy and patient empowerment: • joining partners together • range of possible entry points • range of options for planning and funding, e.g.: – moral suasion – formal political control • countervailing power. 2. Legal provisions • generally rights are restricted to statements of principles • a legal entitlement, not a privilege, a commodity, or a product of charity • can have disadvantages, e.g. coverage, legalism, may slow social change. 3. Health rights in health care assessment • recognition of a plurality of evaluation dimensions: • trade-offs • hierarchical order (Rawls).6 4. Assessment of health outcomes in a rights based context may result in: • analysis of the fulfilment of basic health rights • control for unacceptable inequalities • aggregate (population) utility-based outcomes and measures. 6 Rawls, J. A theory of justice. Cambridge, MA, Harvard University Press, 1971. 50 Health Economics as a Tool for Leaders Theme 4. Some economic tools 4.1 Use of economic tools Overhead: Economic tools include (4.1) 1. Health outcome measurement (e.g. quality-adjusted life-years). 2. Costing (e.g. total costs, the components of cost and their distribution). 3. Economic evaluation (e.g. the cost-effectiveness of a new drug). 4. Development and diffusion of health technology (e.g. incentives for R&D and for how technologies are used). 5. Economic modelling and forecasting (e.g. a decision-tree model or econometric approaches). Note: See details in Learning to live with health economics. Other tools are available in textbooks. Emphasis on usefulness of tools; elements requiring assessment. Additional material for 4.1 Health outcome measurement For example, the Quality of Well-Being Index assesses mobility, physical activity and social activity. An interviewer asks what the patient did as a result of illness during the last six days. Scoring for particular functions is based on preference weights derived from the normal population. The benefits represented by particular outcomes can be compared with the costs of doing so. 1. The goal of health care and action, to protect, promote and preserve health status: • requires

standardized assessments. 2. To understand the concepts of health outcomes assessment, distinguish between: • efficacy • effectiveness • efficiency • process and outcomes. Health Economics as a Tool for Leaders 51 3. Health: • is a multidimensional construct • health care is only one determinant of health. 4. The objectives of health outcomes assessment are based on: • equity and equality • quality of care (plan–do–check-assess cycle) • patient's autonomy and choices • responsiveness to patients. Note: In future, explicit health rights will be more important. 5. Main domains of health outcomes include the six D's: • disease, death, discomfort, disability • "dollars" • dissatisfaction. 6. Measurement of health status outcomes requires standardized instruments with: • proven psychometric properties, especially validity, reliability, sensitivity • practical utility for a setting. Costs Costs refer to the opportunities foregone when a given resource is used in a particular way. Total costs can be compared with benefits to see if the resource use is worthwhile. The distribution of costs influences the incentives faced by participants, i.e. whether to take the action or avoid it. 1. Refer to the benefits sacrificed elsewhere ("foregone"): • resources have alternative uses • are wider than financial expenditure alone • can differ according to the viewpoint adopted. 2. Comparing costs and benefits • Requires accurate estimation of total costs. 3. Total costs can be viewed from various perspectives, e.g.: • types • sources • timing, uncertainty. 4. Changing the distribution of total costs can alter: • the incentives faced by participants • the actions they take. 5. The cost information: • can be difficult to obtain • three stages, progressively more difficult – identification – measurement – valuation 52 Health Economics as a Tool for Leaders • consistent approaches facilitate: – comparisons – longer-term learning. 6. Cost information: • can be presented in more or less helpful ways • an aid to: – improved decision-making – better use of scarce resources – improved outcomes. Economic evaluation Economic evaluation – comparing the costs and consequences of, say, introducing a new drug, building a new hospital or purchasing equipment – can help to make the best use of scarce resources. 1. Concerned with assessing efficiency or value for money. 2. Economic evaluation compares the costs and consequences. Many forms, e.g.: • cost–effectiveness analysis • cost–benefit analysis • cost–utility analysis. 3. Key methodological principles include: • framing the question clearly • consideration of an adequate range of alternatives • the use of good evidence about effectiveness • allowance for timing differences and uncertainty • incremental analysis of costs and consequences. 4. Can be used in association with a range of policies: • to encourage rational diffusion and use of health technologies • to reform payment schemes for institutions and health professionals • to develop health care practice guidelines. 5. Can be used to assess health-producing measures: • in different sectors of the economy, e.g.: – road safety – environmental protection – occupational health. Development of health technology Health technologies are not confined to the clinical patient care sector but comprise all health promotion, disease prevention, diagnosis, treatment, rehabilitation and care activities. Economics can help to explain why some technologies are developed, and why some are used more than others. 1. Technologies for health are mechanisms that: • combine scarce resources to produce health improvements for the individual and the entire population.
Health Economics as a Tool for Leaders 53 2. They are developed in the public and private sectors, e.g.: • publicly funded research at universities and in research institutes • privately funded research and development (R&D) by the pharmaceutical industry. 3. New technologies are not developed haphazardly. They are: • influenced by the existing incentives • created by government regulations and market incentives. Diffusion of health technology 1. Considerable inefficiencies can occur in: • how technologies are produced (through R&D) • how they are used, e.g.: – on inappropriate patients – in the wrong settings – by

untrained professionals. 2. New health technologies: • are diffused gradually • adoption generally follows an S-shape pattern. 3. Various factors inhibit or encourage diffusion and use, e.g.: • basic demography and epidemiology of the disease • the payment mechanisms for: – health professionals – institutions • relative prices and costs • financial incentives and direct regulation. Economic modelling and forecasting There is a range of models available: for example, epidemiological models emphasize the relevance of changes in disease patterns, trend models can incorporate technological change (e.g. project what its costs will be in the future), and disease models concentrate on the developments in a cohort of patients once a disease has already started. Models facilitate comparison of a basic scenario with a further alternative, such as comparing intervention with no intervention, or a new intervention with the old intervention. 1. Economic models are a tool to support: • decision-making • policy development. 2. Transparent models: • structure problems • make explicit the assumptions used • explain the consequences clearly. 3. Decision models help rational decision-makers: • to choose the best strategy among clearly defined alternatives. 54 Health Economics as a Tool for Leaders 4. They should clearly: • state their purpose • justify their theoretical basis. 5. The detailed module provides discussion of: • a simple decision-tree model • scenario models • disease models • econometric models. 6. To ensure high quality support for decision-makers requires: • methodological expertise: – expertise about the health problem – expertise in supporting decisions – critical stance by decision-makers. Health Economics as a Tool for Leaders 55 Exercises are very important. Those that follow have been developed in addition to those in the book. The exercises could be set by you prior to the workshop, or developed by the group following discussion with you. They could be chosen, for example, by you from those which have been prepared; supplemented by other exercises as required (e.g. for different groups of participants) or discussed with interested participants to see if alternatives are preferred. You can select the exercises likely to be most valuable for the particular group being assembled. Depending on the composition of the group of participants it may be necessary to consider developing additional exercises. For example, the exercises suitable for ministers or very senior bureaucrats may well need to be modified or supplemented for major funders of research or those with judicial responsibilities. It would be desirable to complete the selection of exercises before the group meets, since time for these senior decision-makers at the meeting itself will be at a premium. Two role-plays are also included with the learning materials, one taken from Module 2.3.1 in the book and the other (developed for these seminars) on negotiations for a pay increase between the national association of doctors, the finance minister and the health minister. The most suitable time for these role-plays is likely to be the evening of 6 the first day. There should be an opportunity for the participants to have a plenary discussion about the different approaches, results and trade-offs which emerge from the negotiations in each working group. Theme 1. Economics of health Exercise 1.1. Interrelationships, and everybody's concern The main goal of the highest level of decision-makers in the health care system (e.g. ministers of health, the most senior officials) is to improve health. However, health outcomes are not derived solely from the activities of the health care sector. How can the most senior decision-makers: • best prioritize their activities, so that benefits are maximized relative to costs; • foster the necessary cooperation between economic sectors, so that the contribution of other ministries to health gain is obtained; • achieve the appropriate contributions from the public and private sectors, so that not only the public sector is considered in ministerial decisions; • decide which economic analysis tools help them to make those decisions better? Teaching material: exercises 56 **Health Economics as a Tool for Leaders Exercise** 1.2. Reallocation of resources for health Since there are many determinants of health, how can senior decision-makers in health care maximize the favourable impacts

of: • the economic, social and other environmental factors (e.g. lower unemployment, higher levels of income); • influences at the workplace (e.g. fewer accidents); • factors operating at the level of individual behaviour (e.g. less alcohol and smoking, better diets); and • the influences operating through families (e.g. better mental health). Given the range of factors that contribute to health outcomes, to what extent are: • decisions properly collective (e.g. made by governments) or individual (e.g. made by private individuals or families); • outcomes emphasized (e.g. health status) compared to processes (e.g. treatment with dignity, waiting times); • decisions thought of as having long-term or more immediate consequences (e.g. after the next election)? Exercise 1.3. Reallocation of resources for health (role-play) Having read the play below, discuss the following two questions. 1. Barbara Luke, the minister of health, is concerned about the percentage of national income spent on health. Which factors do you think should be considered when deciding this? Do these factors differ from those you would consider when deciding the percentage to be spent on education, telecommunications or subsidizing agriculture? 2. Robin Matthew, the minister of finance, is concerned that important health problems are not being tackled rigorously. Which improvements could be made in health programmes in your own country which might appeal to the minister of finance because they would help the national economy? Panel of Ministers: Economic policies and health care reform Introduction by moderator Ladies and gentlemen, ministers of health, I am delighted to welcome you to Ljubljana for an extraordinary session to exchange experience on health care reform. Before we get down to business, just imagine, that we are moving to EUROPIA, a country psychologically if not physically near the heart of the region. We are privileged to observe Robin Matthew, the rising star of the government, as the clever minister of finance, who is waiting in a restaurant for a private meeting with a colleague ... Here she comes, the seasoned minister of health, Barbara Luke. Just listen to what they are saying. Health Economics as a Tool for Leaders 57 Scene: In the restaurant: a dialogue on health policy between colleagues Robin: As you know, we might become a candidate country to join the European Union. Therefore, we will look carefully at things like the European monetary system and other criteria by which our case will be judged. Frankly speaking, it will be a big headache for any finance minister. Barbara: How so? I thought it was supposed to be a big opportunity. Robin: Well, we need to slim down public expenditure, cut taxes and remove some of the costs which are now falling on employers. I am just giving you a chance to look at the issues from my perspective. I think that you will have to rethink ideas in your sector. Barbara: But surely we cannot cut health expenditure any further. The percentage going to health is already way below our neighbours', and our doctors and nurses continue to be relatively poor. Robin: I am sorry I must be blunt. How could I explain to other ministers why I should treat you differently? Why are you so special, this is what they will say. These are tough times for all of us, even if there was no economic decline. Barbara: Well, I don't see myself behaving differently from any other health minister. When I meet my fellow health ministers from other countries, they all ... Robin: Exactly! When I look at your colleagues in the other countries, they are also having a hard time making the health industry more efficient and competitive. Barbara: I am sorry, Robin, you are quite wrong there. You are ignoring all the serious reform initiatives that have taken place in countries across Europe. In our different ways we are trying to find the balance – the public/private mix, as some of us call it. Everyone of us, we are trying to bring expenditure under control. Precisely because health is not an industry, we have to think about the quality of care people get and how it meets their needs. Robin: Look, in education, they tell me how many schools and teachers they need, and why. They tell me how many university places, and we all agree that we are investing in education and training. In social security, they tell

me how many elderly people there are, how many disabled, how many longterm employed, and I work out what we can afford. But you ... Barbara: Wait a minute! Robin: You tell the public that we are getting healthier, and yet every year you tell me that you need more money. Is your budget supposed to be open-ended upwards? You lead people to think that their care is free, but someone must be paying the bill. Barbara: No, no, I do not mean that everything needs to be free. There is a lot of self-care in families and among friends. People buy drugs over the counter. There is a tremendous interest now in things like nutrition and promoting health. None of this comes into your calculations. The fact is that whenever 58 Health Economics as a Tool for Leaders we maintain or restore someone's health, we have helped the individual as well as the economy. We have enabled a disabled person to go on living an independent life, we have a schoolchild who can study uninterrupted and we have made workers become more productive. Robin: That I do not doubt. My job is to get public expenditure under control. Consumer goods improve the standard of living, remove household chores, maximize people's leisure possibilities. They give them the chance to get on with the kind of lives they want to live. The health sector only drains resources away from the nation. Where is the profit? Barbara: Of course we do not have profit in the health care sector, nor are we trying to turn our health care into a trading company. We have health gain, but it is also clear that family doctors and community nurses reduce and prevent the need for expensive services. Robin: If it's that straightforward why are you always asking for more money and expecting the health insurance people to hike up their premiums? Or is it because some important health problems are not tackled vigorously, for example accidents, suicides and heart attacks, especially among young men? Barbara: On the contrary. We have made a good start with making people more aware of how to use appropriate services appropriately and how to look after themselves. The quality of services is constantly being improved. Robin: I have not tried to cut your budget for its own sake. Anyhow, I cannot get this country's economy on the right track unless all ministers are seen to exercise restraint. For example, there are several countries which use fewer beds and doctors. And let me remind you that we have closed quite a number of old-fashioned industrial plants in other sectors. Barbara: I don't think that you have grasped my message. Good social policies, including health, will make people believe that this is the country they want to live in. People will then truly make our country a place worth living in. Good social policy supports economic policy. I need your help to provide our people with a set of decent essential services. Do that for us, and we can assure you, you will eventually see the economy grow, as we all want to see it grow, and that will lift the pressure off both of us when we come to talk about budgets in the future. You see, really you should ask me what I would do with a 5% increase in
6 my budget. I have plenty of practical ideas. Robin: I have to rush now. It was nice talking with you. We can discuss this again when the economy has recovered. The scene fades .

Health Economics as a Tool for Leaders 59 Theme 2. Economics of health systems development Exercise 2.1. Equity and efficiency Consider the implications of a substantial proposed policy change in your country in terms of the expenditure income revenue identity. • Who gains (e.g. health workers) and who loses (e.g. taxpayers)? • What implications are there for • health care production, e.g. will you get better health outcomes or productivity; • health production, e.g. will health improve as a result of changes in areas other than health care, such as transport, the environment, education? • Are the implications similar for decision-makers at the three levels (ministers and very senior officials, managers and practitioners)? If not: • how do they differ (e.g. policy compared to practice); • what are the implications for – the incentives they face (e.g. the balance of costs and benefits for them) – the decisions they take (e.g. popularity,

prestige, quality compared to quantity of care)? What is good for the hospital or the overall health system may be a problem for doctors (e.g. lower salaries) and a danger to the re-election chances of politicians (and do not forget the patient!). Exercise 2.2. Expenditure ≡ income ≡ revenue In your country is the health care: • not effective (e.g. over-treatment); • effective but more costly than necessary (e.g. over-priced drugs or health provision by doctors when nurses could provide it satisfactorily); or • valued below its cost (e.g. the benefits to the patient, who pays nothing, are less than the cost to society of providing the treatment)? Why has this happened, and how could economic analysis improve the situation in the future? Exercise 2.3. Implications of financing systems In many health care systems consideration is being given to greater privatization. If this applies in your country, consider the following questions. • What is to be privatized, and what is it intended to achieve by doing so – explicitly – implicitly? • What role is being proposed for economic analysis in the decision-making process, and what other contributions could it make? • How is the process of privatization to be undertaken (and what complementary changes are required, for example in training managers)? ≡ ≡

60 Health Economics as a Tool for Leaders
• How are equity, effectiveness and responsiveness to be achieved? • How will the continuing overall responsibilities of the government, its stewardship function, be discharged under the new arrangements? • After privatization, how will you and other senior decision-makers know if you have achieved what you intended? On what information will these conclusions be based? Theme 3. Economics of management and the change process Exercise 3.1. Policy analysis, bargaining and negotiation Most decision-makers probably spend more of their time on health policy development and less on agenda-setting and implementation. Consider three significant advisory or policy-making episodes in which you were involved recently. How much time and effort did you devote to: • agenda-setting • health policy development • health policy implementation? In terms of maximizing your contribution to the achievement of improved health outcomes and processes: • do you consider these allocations optimal • should they be changed (if so, how) • how would you know if the change was an improvement? To what extent do these allocations of your personal resources facilitate optimal decisions by others? **Exercise 3.2. Public health: protection, promotion and stewardship Economics are involved in many decisions**. It is important to know the questions for which economics are relevant, what tools can be used and how you can best use them. 1. Where is economics currently contributing to your decision-making, and what other areas are there where it could be helpful? 2. How would you know, from your existing monitoring and evaluation mechanisms, whether progress was being made towards your objectives? Health Economics as a Tool for Leaders 61 Exercise 3.3. Citizens' participation, patients' rights and ethical frameworks Surveys show that many citizens are dissatisfied with their health care systems, e.g. in Italy 59%, in Greece 54% and in the United Kingdom 41%, according to a survey.7 Also, why are so many fewer people dissatisfied in other countries in the WHO European Region, say in Denmark and Finland (6%), in Germany (11%) and in France (15%)? Can you use health economics to challenge such findings? Can health economists find effective ways of improving the situation? Are senior decision-makers responsible for these results? How can health economics be used to pinpoint responsibilities and accountabilities, say by managers and practitioners, for health care outcomes and processes (e.g. by health status measurement, quality assessment or cost–effectiveness analysis)? Approaches to decision-making in health care can be legally based or economically based. Do you see these two approaches as competitive or complementary? Exercise 3.4. Citizens'

participation, patients' rights and ethical frameworks (role-play) The role-play involves negotiations about a claim for increased salaries for doctors. The negotiators are: • the doctors' association, represented by the chairperson of the national medical association and its chief industrial relations officer; • the finance minister, as the chief government negotiator; and • the minister for health, who has an adviser from the health ministry (if numbers in the group sessions permit it). Each working group undertakes the same role-play, involving the doctors' initial claim, the response from the government, the resulting negotiations and the final agreed settlement. The settlement could include an overall salary increase, variations for a range of purposes (e.g. areas of medical shortage or geographic regions) and any quid pro quo the government obtains for its additional expenditure. After the group discussions are completed the results and the process by which they were obtained are considered in a plenary session. The focus should be particularly on the similarities, the differences and the reasons for them in each group. 7 Mossialos, E. Citizens' views on health systems in the 15 member states of the European Union. Health economics, 6(2): 109–116 (1997). 62 **Health Economics as a Tool for Leaders Theme 4. Some economic tools Exercise 4.1**. Relevance of economic tools Imagine that you are limited to taking up two of the five tools of economic analysis included in the learning materials:

• health outcome measurement (e.g. quality-adjusted life-years);

• costing (e.g. total costs, the components of the costs and their distribution);

• economic evaluation (e.g. the cost–effectiveness of a new drug);

• development and diffusion of health technology (e.g. the incentives for R&D and for how technologies are used);

• economic modelling and forecasting (e.g. a decision-tree model or econometric approaches). Consider particular decisions you are going to be making.

• For what sorts of decision would the economic tools be useful to you, and at what stage of the decision-making process?

• In using the economic tool(s) to assist you in reaching a better decision, what elements of the analysis and its interpretation would you subject to critical assessment? Exercise 4.2. Use of economic tools Consider a significant health care decision in which you were involved recently.

• Did you use economic analysis tools in the decision-making process? • Knowing what you know now, could greater value have been derived from their inclusion than actually occurred? • In summary, what changes (e.g. in the analysis, its interpretation, its use and its broader context) would contribute to better uses of the tools in the future?

Health Economics as a Tool for Leaders 63 Final comments 1. The learning materials do not produce a fully trained health economist. 2. A short seminar enables users to:

6

• judge better what are appropriate and inappropriate circumstances for the application of health economics;

• appraise more perceptively the advice senior decision-makers receive from health economists (and when it is missing);

• understand some specific economic tools, concepts and reasoning;

• benefit from the economic way of thinking (e.g. incentives, marginal analysis, costs compared to benefits, equity and efficiency);

• benefit from meeting and interacting with other senior colleagues and input from an experienced resource person in the field. 3. The full set of learning modules in the complete book:

• contains much more detail and additional topics

• provides detailed references, examples and exercises. 4. Economic advice to support decision-makers can be provided in numerous other ways, including: • by staff with economic expertise; • by experts in WHO or elsewhere (many are included or referred to in the full set of learning materials); • through support for

research (and training) in high priority areas.

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Indeks